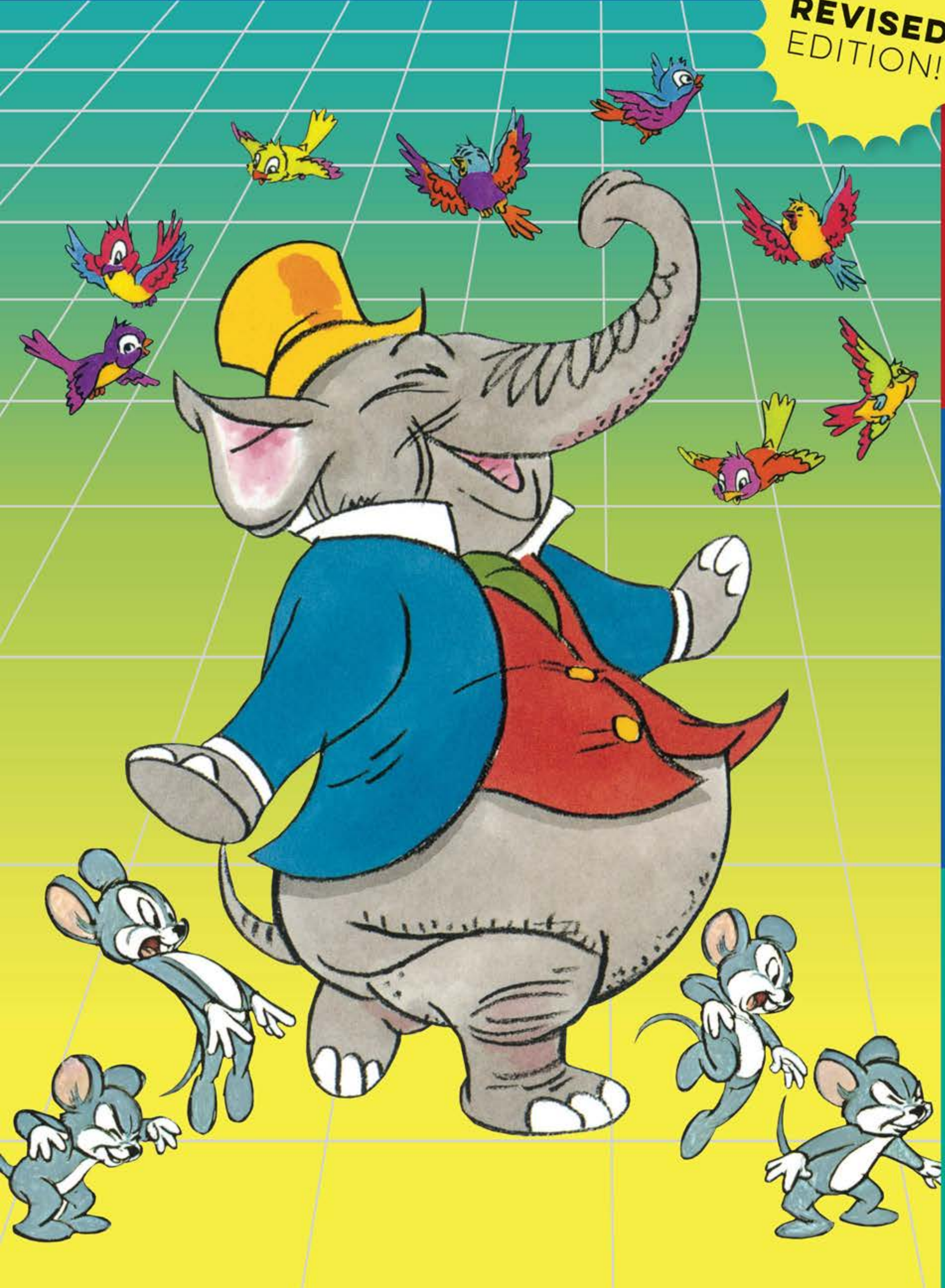
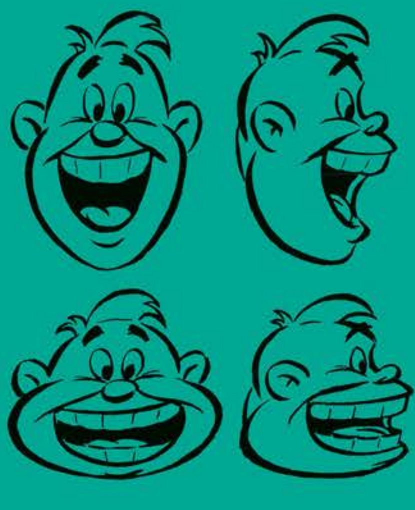
CARTOON ANIMATION

WITH **PRESTON BLAIR**

REVISED EDITION!



LEARN TECHNIQUES FOR DRAWING AND ANIMATING CARTOON CHARACTERS



CARTOON ANIMATION

WITH **PRESTON BLAIR**

Walter Foster

Brimming with creative inspiration, how-to projects, and useful information to enrich your everyday life, Quarto Knows is a favorite destination for those pursuing their interests and passions. Visit our site and dig deeper with our books into your area of interest: Quarto Creates, Quarto Cooks, Quarto Homes, Quarto Lives, Quarto Drives, Quarto Explores, Quarto Gifts, or Quarto Kids.

© 2020 Quarto Publishing Group USA Inc.
Text and illustrations © 1994 Preston Blair. All rights reserved.

First published in 2020 by Walter Foster Publishing, an imprint of The Quarto Group.
26391 Crown Valley Parkway, Suite 220, Mission Viejo, CA 92691, USA.
T (949) 380-7510 **F** (949) 380-7575 **www.QuartoKnows.com**

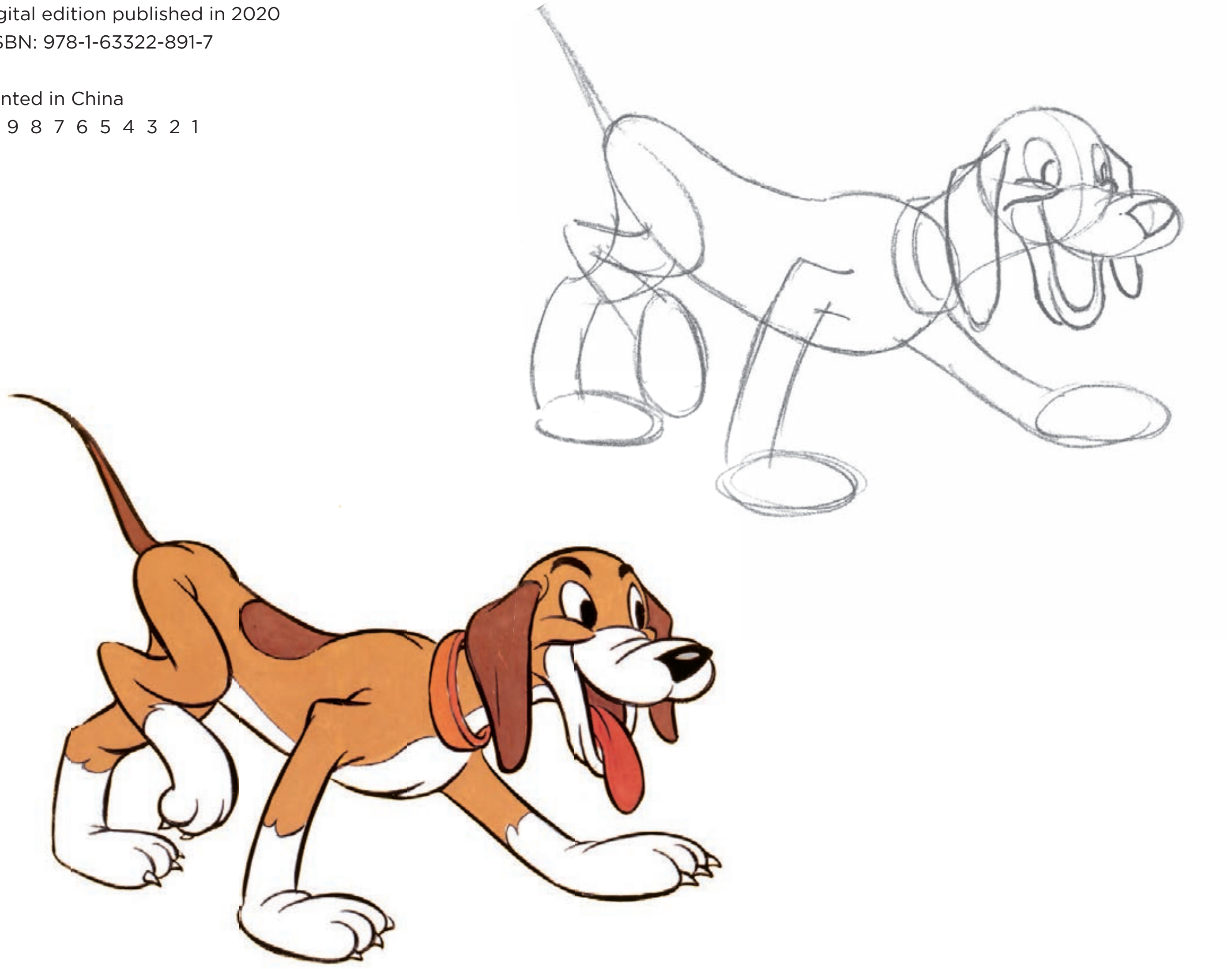
All rights reserved. No part of this book may be reproduced in any form without written permission of the copyright owners. All images in this book have been reproduced with the knowledge and prior consent of the artists concerned, and no responsibility is accepted by producer, publisher, or printer for any infringement of copyright or otherwise, arising from the contents of this publication. Every effort has been made to ensure that credits accurately comply with information supplied. We apologize for any inaccuracies that may have occurred and will resolve inaccurate or missing information in a subsequent reprinting of the book.

Walter Foster Publishing titles are also available at discount for retail, wholesale, promotional, and bulk purchase. For details, contact the Special Sales Manager by email at specialsales@quarto.com or by mail at The Quarto Group, Attn: Special Sales Manager, 100 Cummings Center, Suite 265D, Beverly, MA 01915, USA.

ISBN: 978-1-63322-890-0

Digital edition published in 2020
eISBN: 978-1-63322-891-7

Printed in China
10 9 8 7 6 5 4 3 2 1



CARTOON ANIMATION

WITH **PRESTON BLAIR**

CONTENTS

From the Editors 6
Introduction from Preston Blair 8

CHAPTER 1:
GETTING STARTED 10
  Tools & Materials 12
  Drawing Basics 14
  Animation Methods 18

CHAPTER 2:
CARTOON CONSTRUCTION 22
  Parts of a Cartoon Character 24
  The Body 24
  The Head 30
  Facial Expressions 34
  The Hands 38

CHAPTER 3:
CHARACTER DESIGN & DEVELOPMENT 40
  Cartoon Examples 42
  The Cute Character 42
  The Screwball Type 48
  The "Pugnacious" Character 50
  More Animal Characters 52
  Fictional People 60
  Children 62

CHAPTER 4:
BASIC CHARACTER MOVEMENT 64
- Comic to Life 66
- Line of Action 66
- Rhythm & Design 70
- Basic Movement 72

CHAPTER 5:
ANIMATION PRINCIPLES 90
- Beyond Simple Movements 92
- Rough Sketches 92
- Balance 94
- Paths of Action 100
- Animation Effects 108

CHAPTER 6:
ANIMATED ACTING 112
- Expressing an Attitude 114
- Three Rules for Actors 114
- Body Language 116
- Dialogue 120

About Preston Blair 128

CELEBRATING 70 YEARS OF PRESTON BLAIR!

FROM THE EDITORS

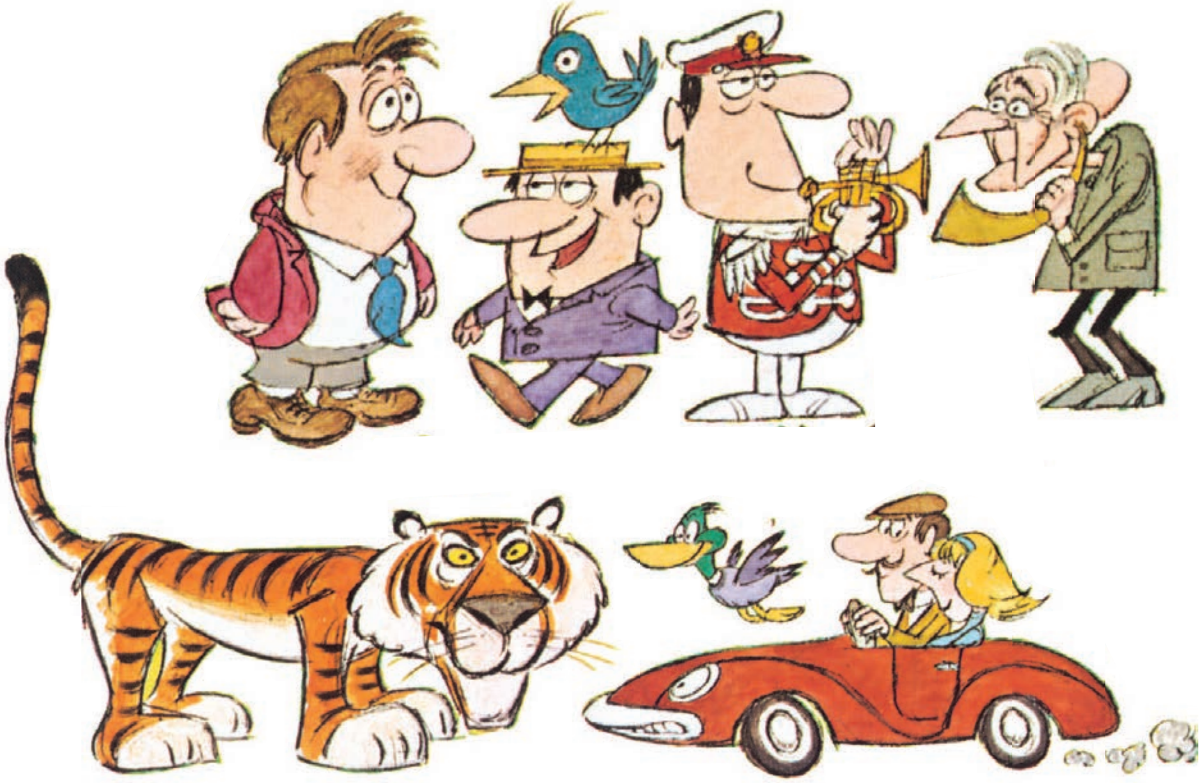
In 1948, Preston Blair authored and illustrated his first book for Walter Foster Publishing: *Animation* (now titled *Cartooning: Animation 1*), which is still in print today. *How to Animate Film Cartoons* followed years later, and in 1994, both books were combined with new material to create *Cartoon Animation with Preston Blair*. Although Preston passed away in 1995, his wisdom and legacy lives on decades later in this newly redesigned edition.

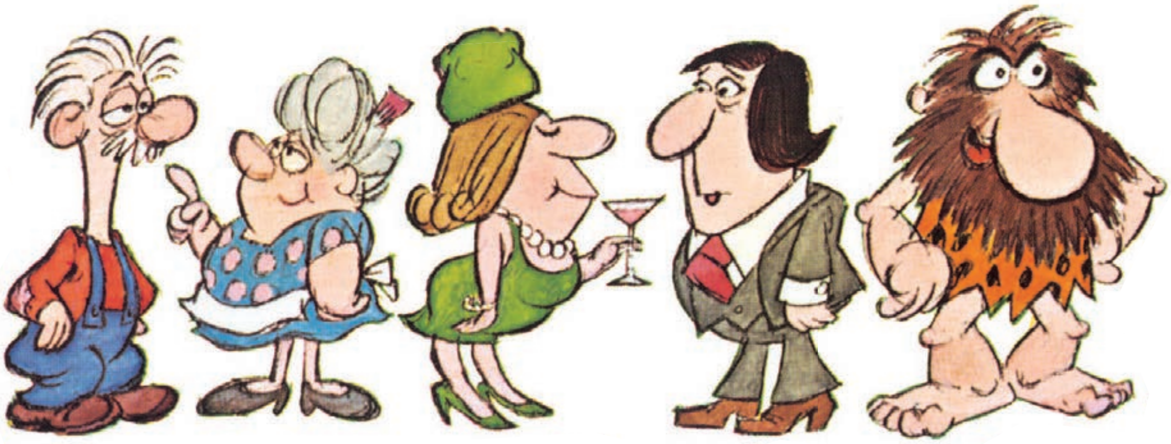
A lot has changed since the heyday of Preston Blair's career, when he worked on Disney Films (*Fantasia*, *Pinocchio*, and *Bambi*), Tex Avery cartoons at MGM, and at Hanna-Barbera (including *The Flintstones*). In 20th-century animation, Preston and his contemporaries employed many different techniques than the ones used today. These included using a metronome to determine the speed of frames of an action, using a stopwatch to time the number of frames per action, animating with cutouts, coloring animation cels, using backgrounds and cel overlays, and filming with an animation camera and a light box. Today, these functions are performed using high-end digital technology.

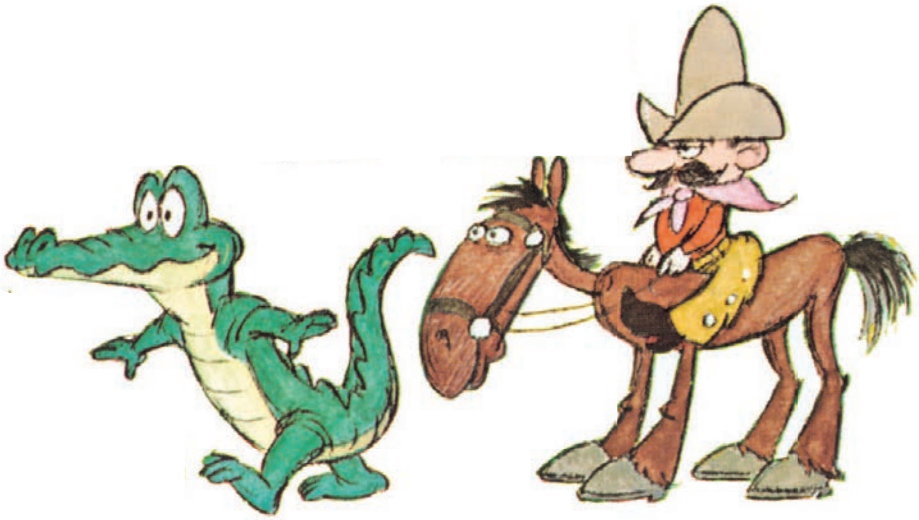
Yet no matter how much has changed since those early days, the foundational principles for creating believable animated personalities remain. In this book, Preston shows you tried-and-true methods for constructing cartoons, building personality-rich characters, creating basic and complex character movements, animating facial movements for dialogue, and much more. This is the core knowledge one needs to become a successful animator.

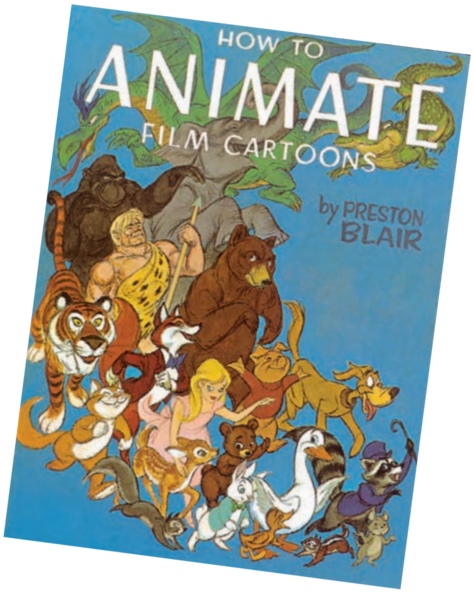
We hope you enjoy this new edition of *Cartoon Animation with Preston Blair*, which will continue to teach generations of aspiring artists the principles of animation for decades to come. Now, please turn the page and read the words of Mr. Blair himself, who will introduce you to his magical world!

— The editors of Walter Foster Publishing








HOW TO
ANIMATE
FILM CARTOONS
by PRESTON BLAIR

INTRODUCTION FROM PRESTON BLAIR

This book is dedicated to Hope and Ian, my wife and son.

—Preston Blair

Animation is the process of drawing and photographing a character—a person, an animal, or an inanimate object—in successive positions to create lifelike movement. Animation is both art and craft; it is a process in which the cartoonist, illustrator, fine artist, screenwriter, musician, camera operator, and motion picture director combine their skills to create a new kind of artist—the animator.

The art of animators is unique. Animators bring life to their drawings, creating an illusion of spirit and vigor. They caricature the gestures and expressions in the drawings, give them a fantastic array of character and personality, and make us believe that the drawings actually think and have feelings.

This book was written by an animator to help you learn how to animate—how to make a series of drawings that create a sensation of movement when viewed in sequence. The pioneers of the art of animation learned many lessons, most through trial and error, and it is this body of knowledge that has established the fundamentals of animation. This book will teach you these fundamentals.

Animators must first know how to draw; good drawing is the cornerstone of their success. They must be able to dramatize and caricature life while they time and stage their characters' actions and reactions. The value of all animators' work is determined by the ability of their characters to sway the emotions of their audience—in other words, the characters' "acting" skills. Animators must know how to entertain an audience; how to present gag comedy and how to portray an interesting or unusual happening of life. To do this, they study the great film comedians and read recognized texts on acting. This knowledge helps them to grip their viewers with suspense or make them smile and laugh with humor in the theater of animation.

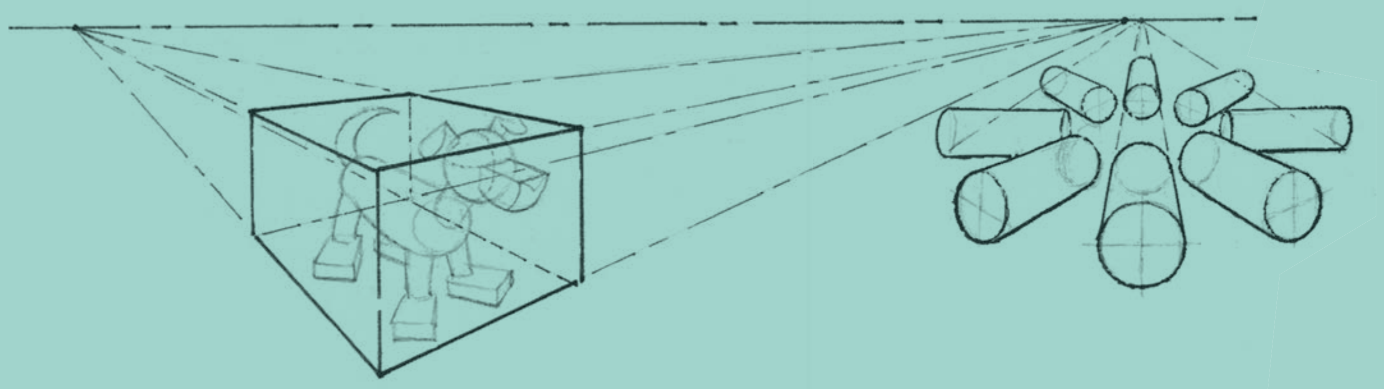
The animation process, however, involves much more than just good drawing. Animators must have knowledge of the elements of screen writing: plot-setting, premise, character, conflict, crisis, climax, exposition, dialogue, and action. These factors determine the types of personalities, expressions, and actions they will need to create. Moreover, if the animation includes characters moving their mouths in speech or song, animators need a knowledge of phonetics; if it features characters responding to a musical soundtrack, they must have knowledge of music and rhythm. Animators must also know how an animation camera works and how to time the character actions to fit the speed of the film. The list goes on and on; the animators' job is immeasurable.

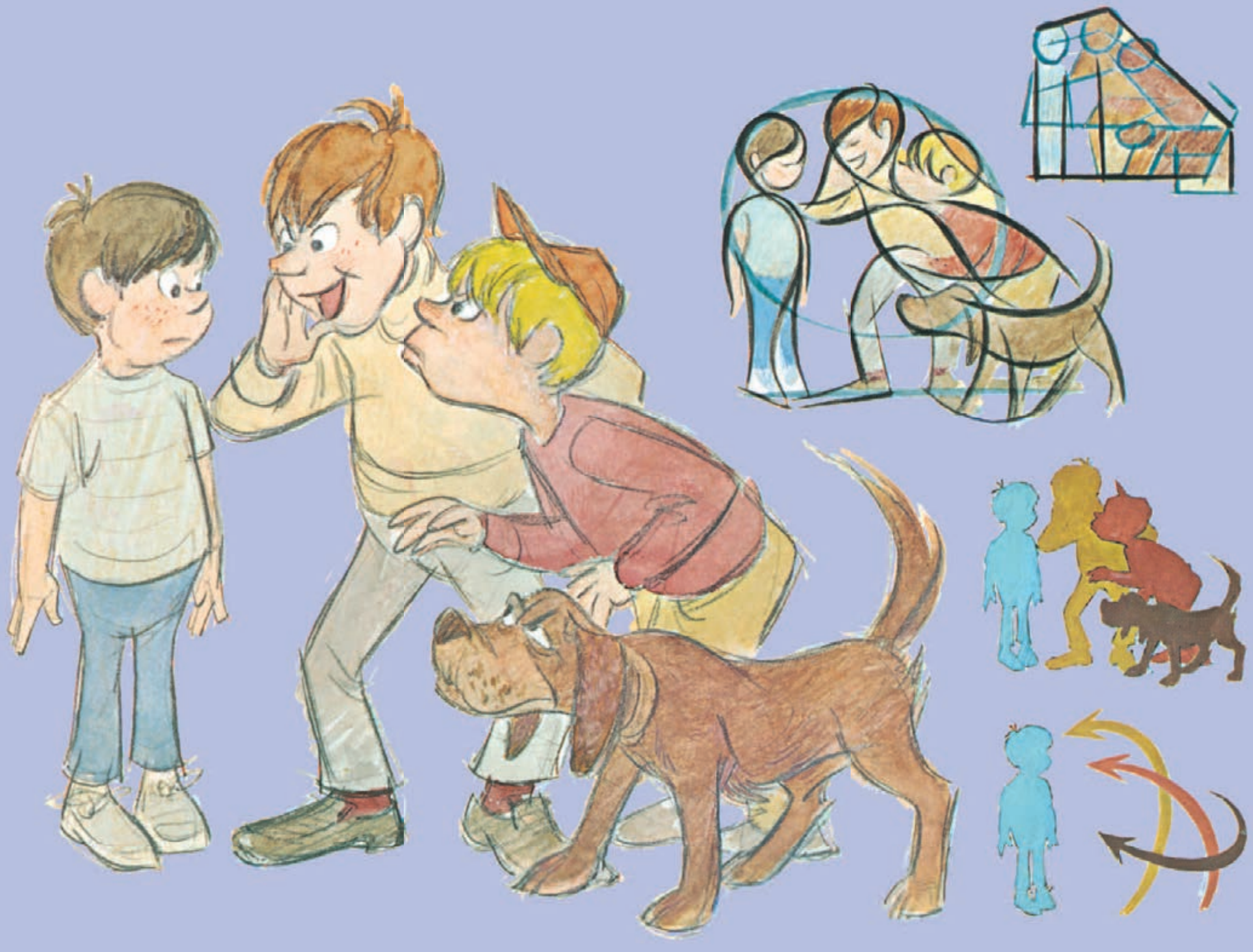
Animation is a vast and virtually unexplored art form. It is, perhaps, more popular today than ever before, and new techniques and methods of animating—including computer animation—are being developed all the time. There are many characters, styles, and background designs, however, that remain to be discovered—so pick up your pencil and get started!

The curtains part as you turn the pages. The journey will be an exciting and adventurous one.

Best wishes!

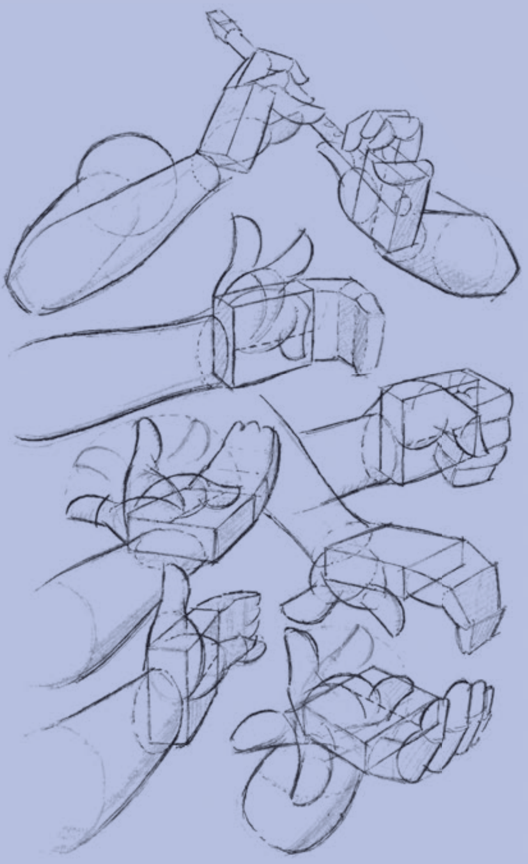
Preston Blair

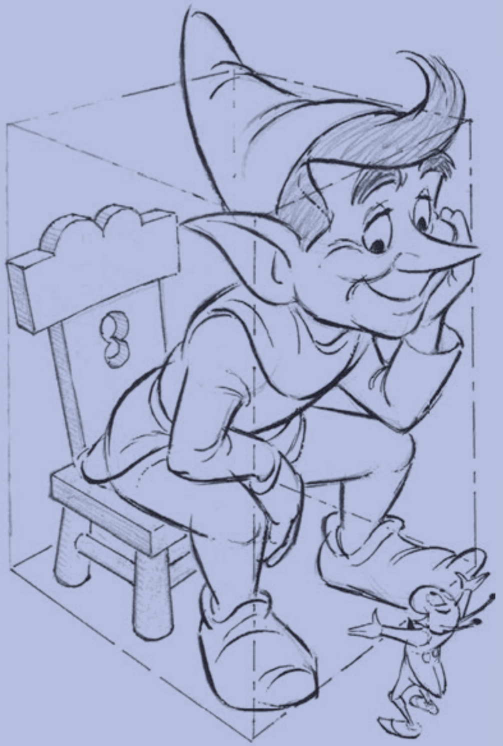




CHAPTER 1

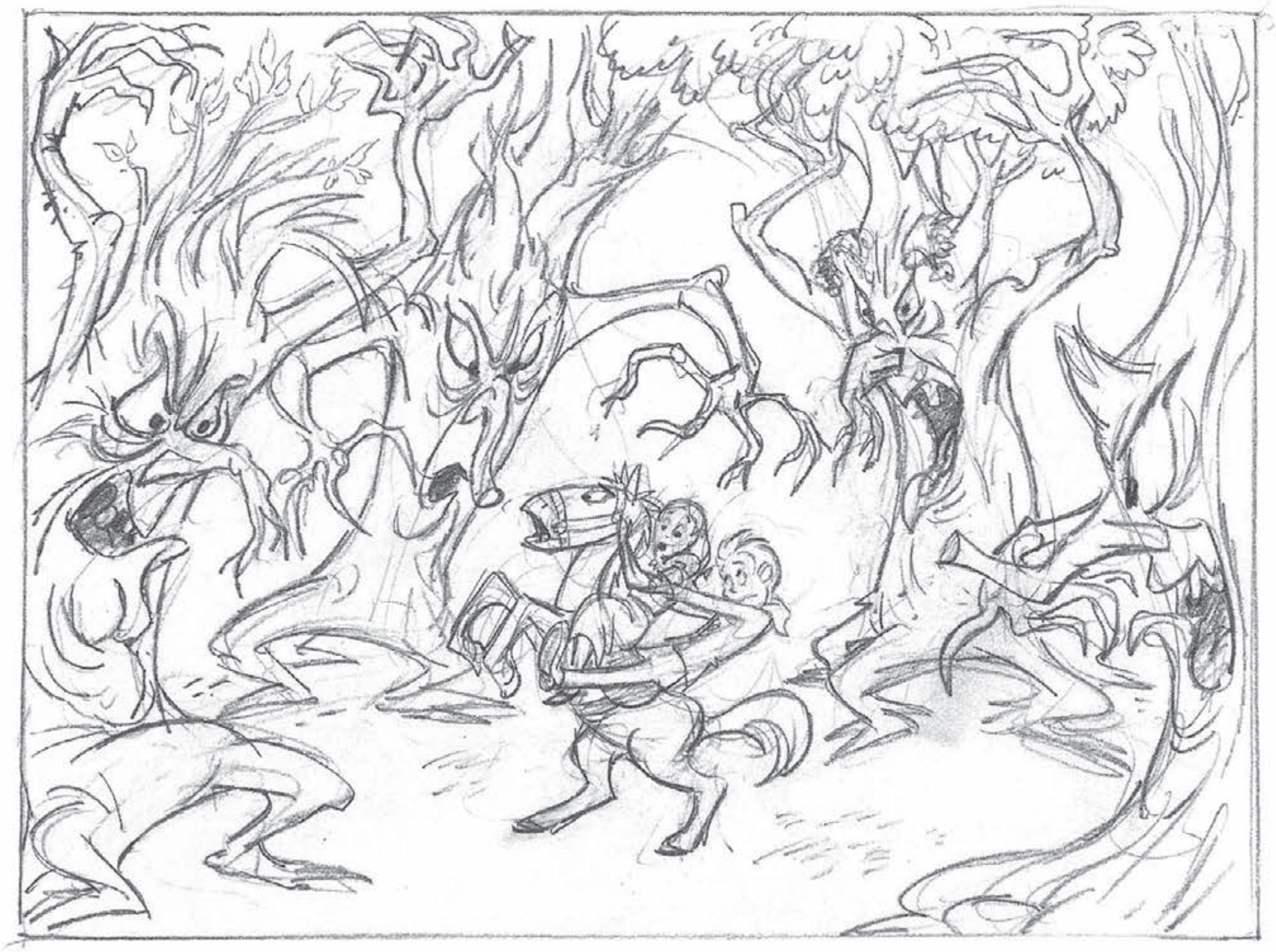
GETTING STARTED





TOOLS & MATERIALS

To master the basics of cartoon animation, you only need a few supplies. You can get started practicing with some paper, a pencil, and an eraser, but inking and coloring tools can help you create finished-looking characters. An animation board is a bigger investment, but it makes it easier to flip between pages and to create "cleanup" or revision drawings from rough sketches.

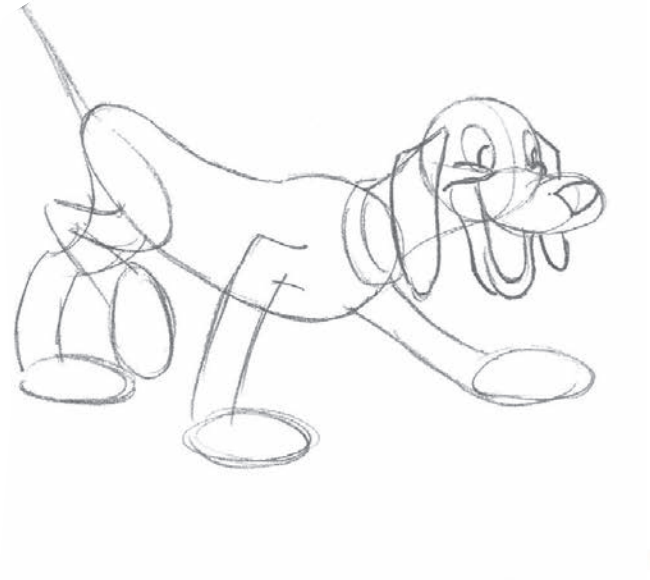


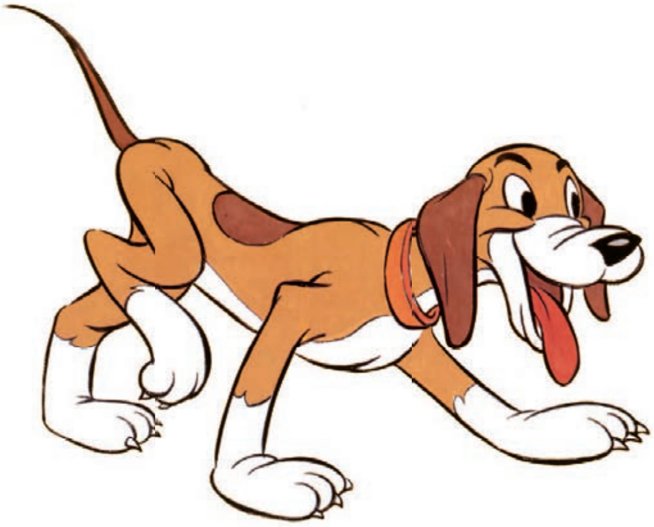
A pencil sketch on a loose sheet of paper.

Paper Drawing paper is available in a range of surface textures (called "tooth"), including smooth grain (plate finish and hot-pressed), medium grain (cold-pressed), and rough to very rough. For the purposes of learning animation, using loose sheets of thin, smooth printer paper is best. If working with an animation board, use unruled, 10" x 12" loose-leaf paper that is punched with two big holes.

Pencil Animators usually draw with a mechanical pencil with a No. 2 lead, so there is no need for sharpening. In traditional animation, animators would also use a "non-photo blue" pencil when creating initial sketches. This is because the color was virtually invisible when the final sketch was copied on a copy machine. For your sketches, you only need to make light marks that are easy to erase.

A dog inked with a brush after its sketch lines were erased to create a cleanup drawing.

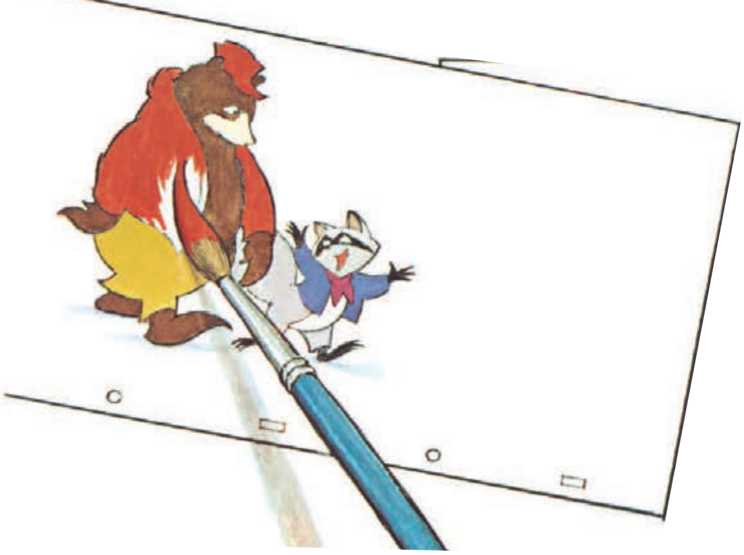




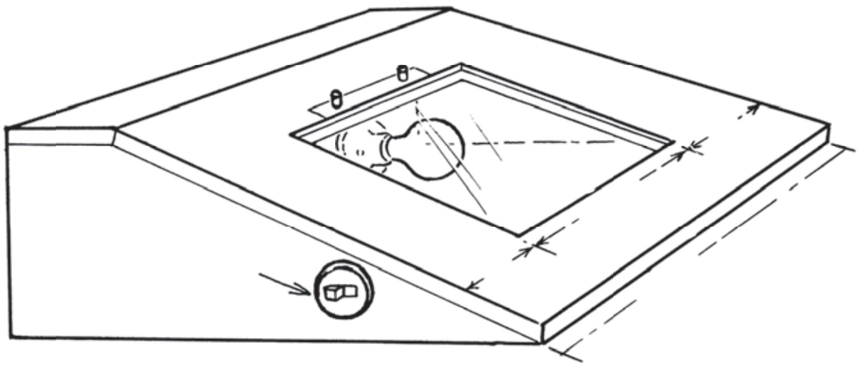
Erasers There are several types of art erasers. Plastic erasers are useful for removing hard pencil marks and large areas. Kneaded erasers can be molded into different shapes and used to dab at an area, gently lifting tone from the paper. Lightly rub a kneaded eraser over an entire sketch to prepare for a cleanup drawing.

Pen or Ink Traditionally, most cartoons were inked with pen, but a brush and ink could also be used to give the lines a heavier, more accented look. Experiment with pens and inks to find your own style. Choose what you like best and become comfortable with it.

A traditional animation cel colored with acrylic paints.



Paint or Markers You can color your animated characters however you'd like. Acrylic paints were used on acrylic animation cels, but you can also color with watercolors, markers, or scan your drawing into a computer and color it digitally.



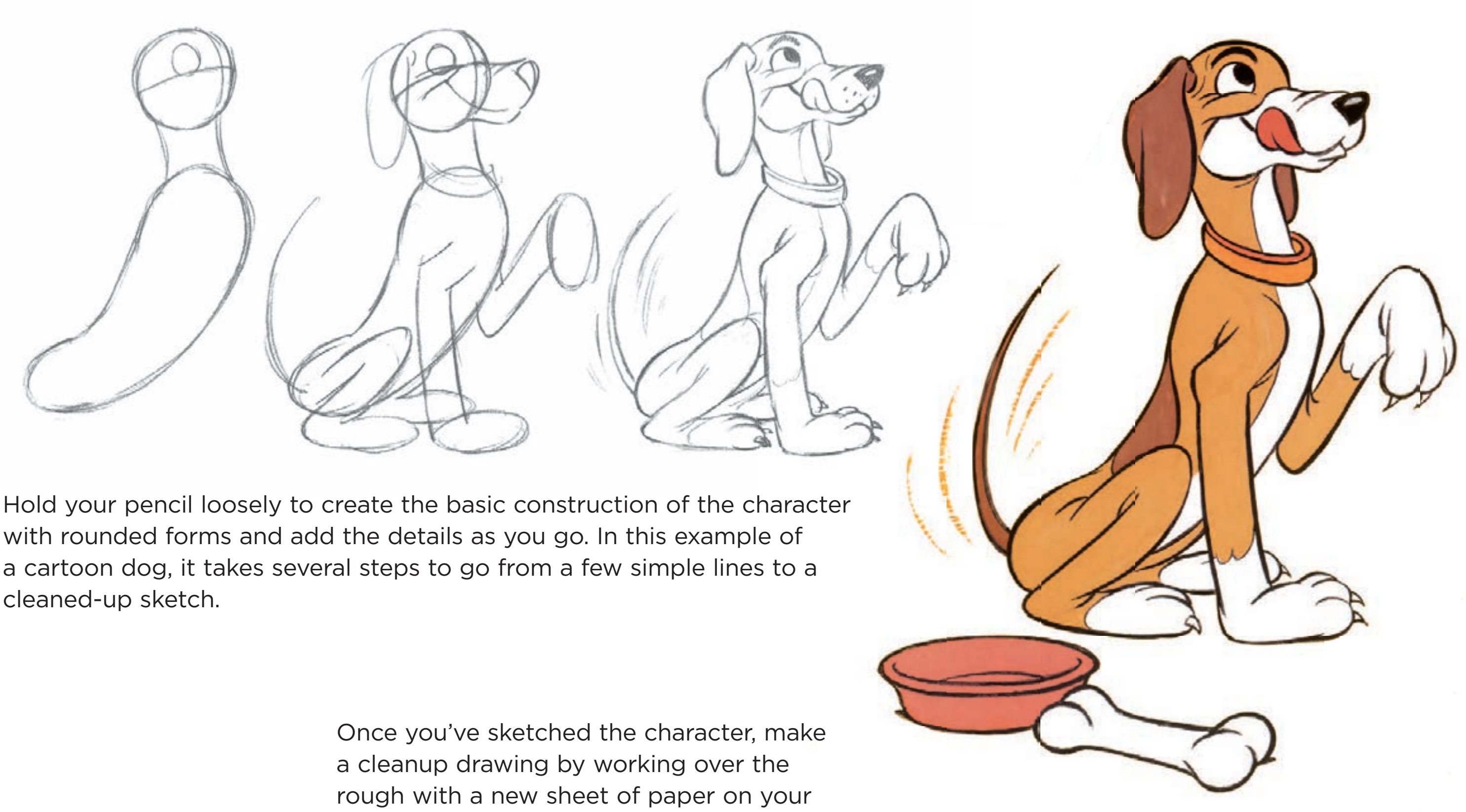
Animation Board An animation board is a drawing surface with a light that shines through the paper. Pegs made of wood or metal hold the paper in place. The glass, which should be the same size as the paper, allows you to see through several sheets of paper at once and note how your series of drawings varies in position. The pegs also allow for easy flipping back and forth between pages.

DRAWING BASICS

A beginner can only become an animator through many hours of drawing practice. Get comfortable sketching, drawing the same character in different positions so that it looks the same every time. These basic techniques will help you get started.

SKETCHES

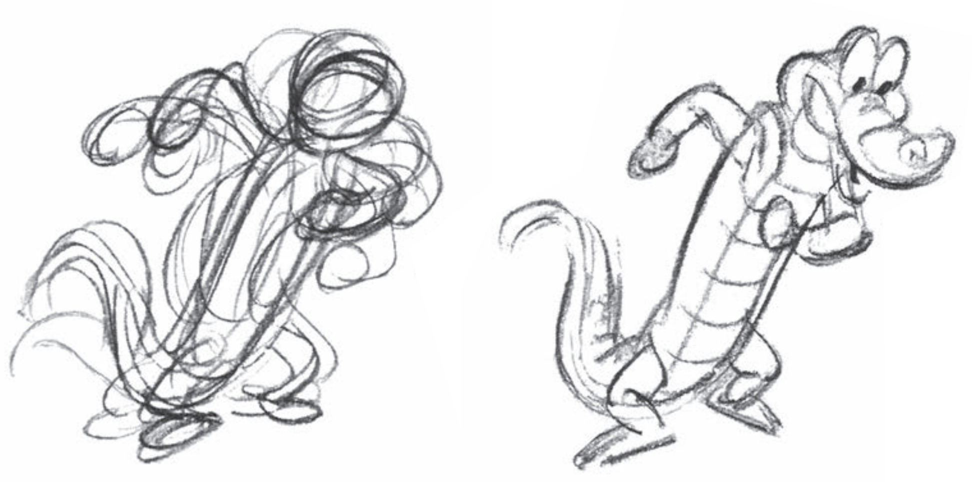
Following a basic formula for drawing this character makes it easier to draw it the same way each time. Animators use reference drawings to know the proportion guidelines when drawing the character in different poses and actions.



Hold your pencil loosely to create the basic construction of the character with rounded forms and add the details as you go. In this example of a cartoon dog, it takes several steps to go from a few simple lines to a cleaned-up sketch.

Once you've sketched the character, make a cleanup drawing by working over the rough with a new sheet of paper on your animation board (similar to a tracing). Then ink and color the final using the mediums of your choice.

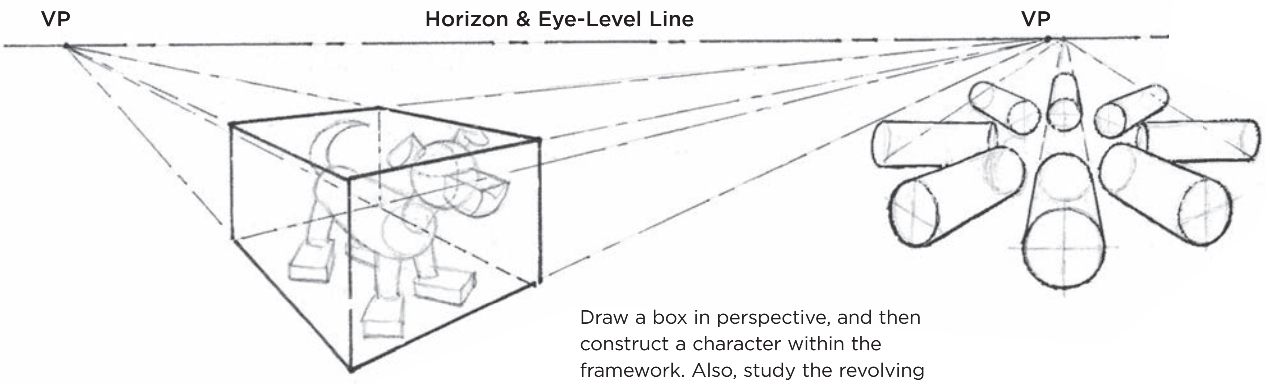
When you're happy with a rough sketch, trace the lines you want to keep over the messy sketch or redraw the character completely.



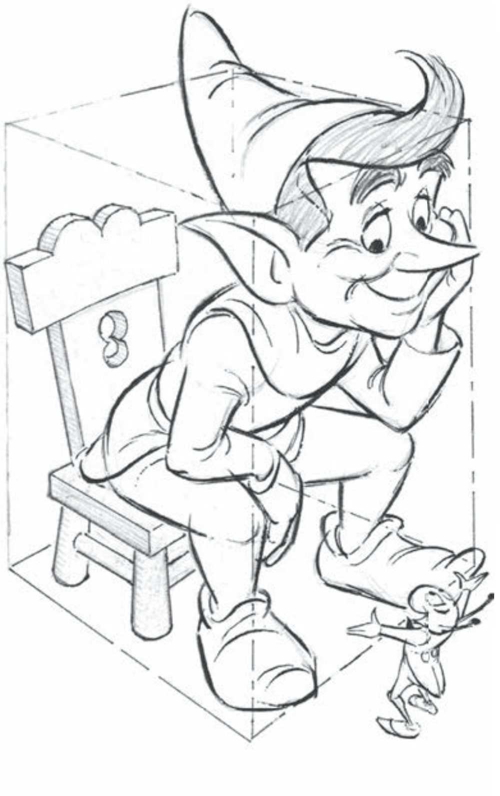
PERSPECTIVE

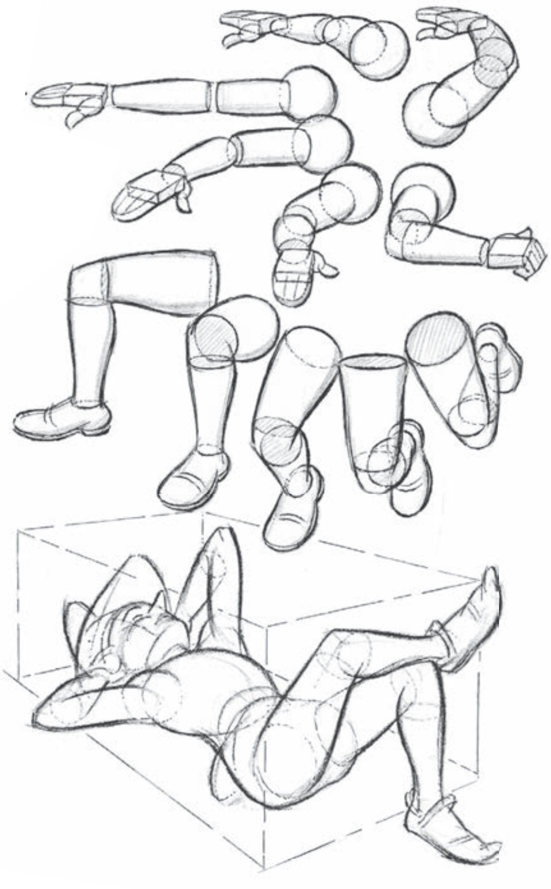
Perspective gives animated drawings the dimension of depth by using vanishing points (VPs) on a distant horizon line and foreshortening (when an object seems to come toward the viewer). The horizon line relates to the viewer's eye level. If the vanishing points have been positioned too close together, the drawing will appear distorted. Experiment with your subject to find a comfortable position for the VPs.

The drawings on this page are based on two-point perspective. The vertical lines of the box are parallel, and the horizon lines are projected from the VPs, as shown below. To draw characters of great height, add a third VP and have the verticals converge at the third VP. This three-point perspective is used to emphasize height by lowering the horizon line (eye level), as if the viewer is looking up. Thus, the drama of animation is heightened. A giant is more frightening from a worm's-eye view.



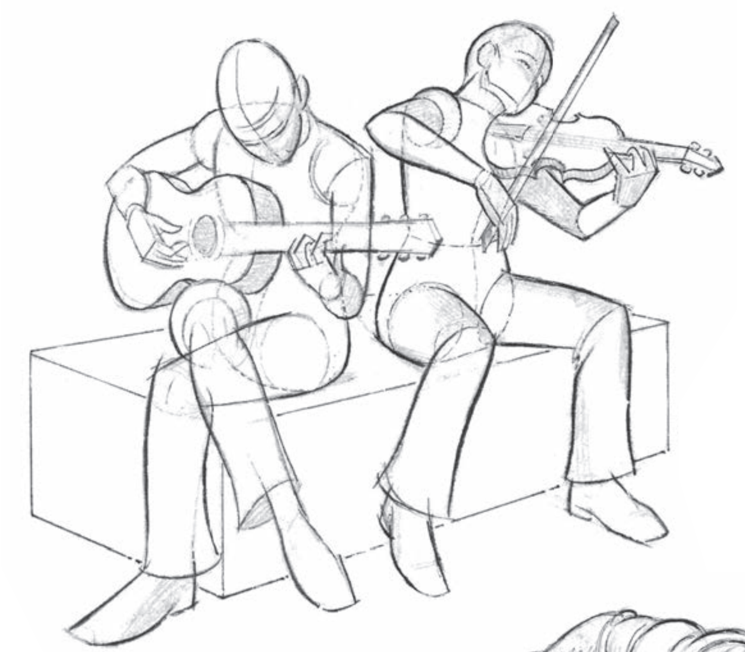
Draw a box in perspective, and then construct a character within the framework. Also, study the revolving cylinder above. Notice the relationship to the arms and legs.



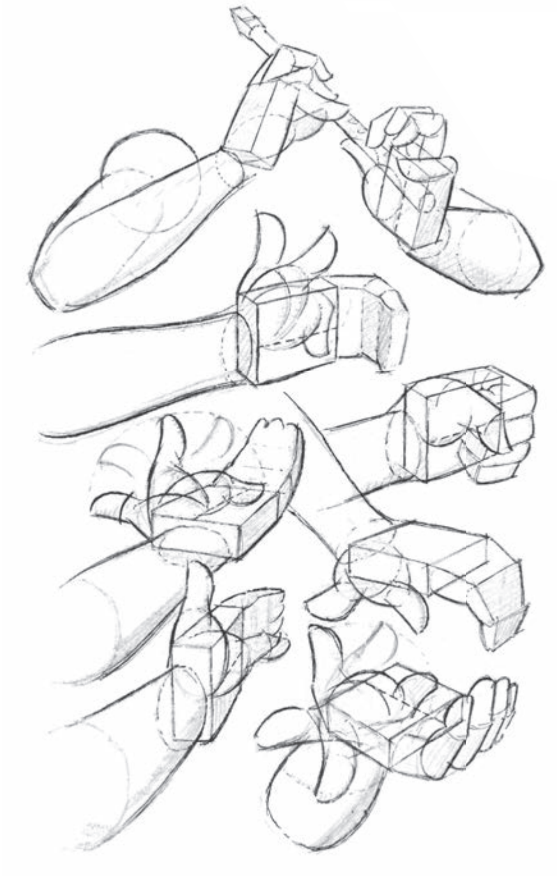


FORESHORTENING

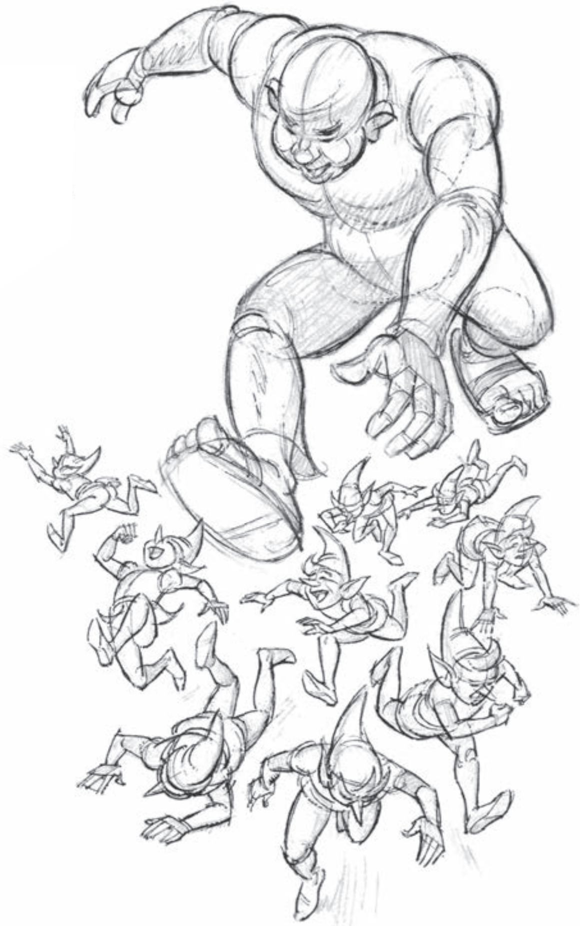
Foreshortening is used when the object is not parallel to the picture plane. Use exaggerated foreshortening in animation—it is very effective. For example, if a character is swinging a bat around horizontally, when the end of the bat comes out and toward the viewer, force the perspective on the bat, making the end very big. When it's on the other side of the character, make the end very small. Perspective can create a normal third dimension, or it can be distorted for dramatic depth, height, or foreshortening.



Note the hands, legs, and arms of the musicians to the left.



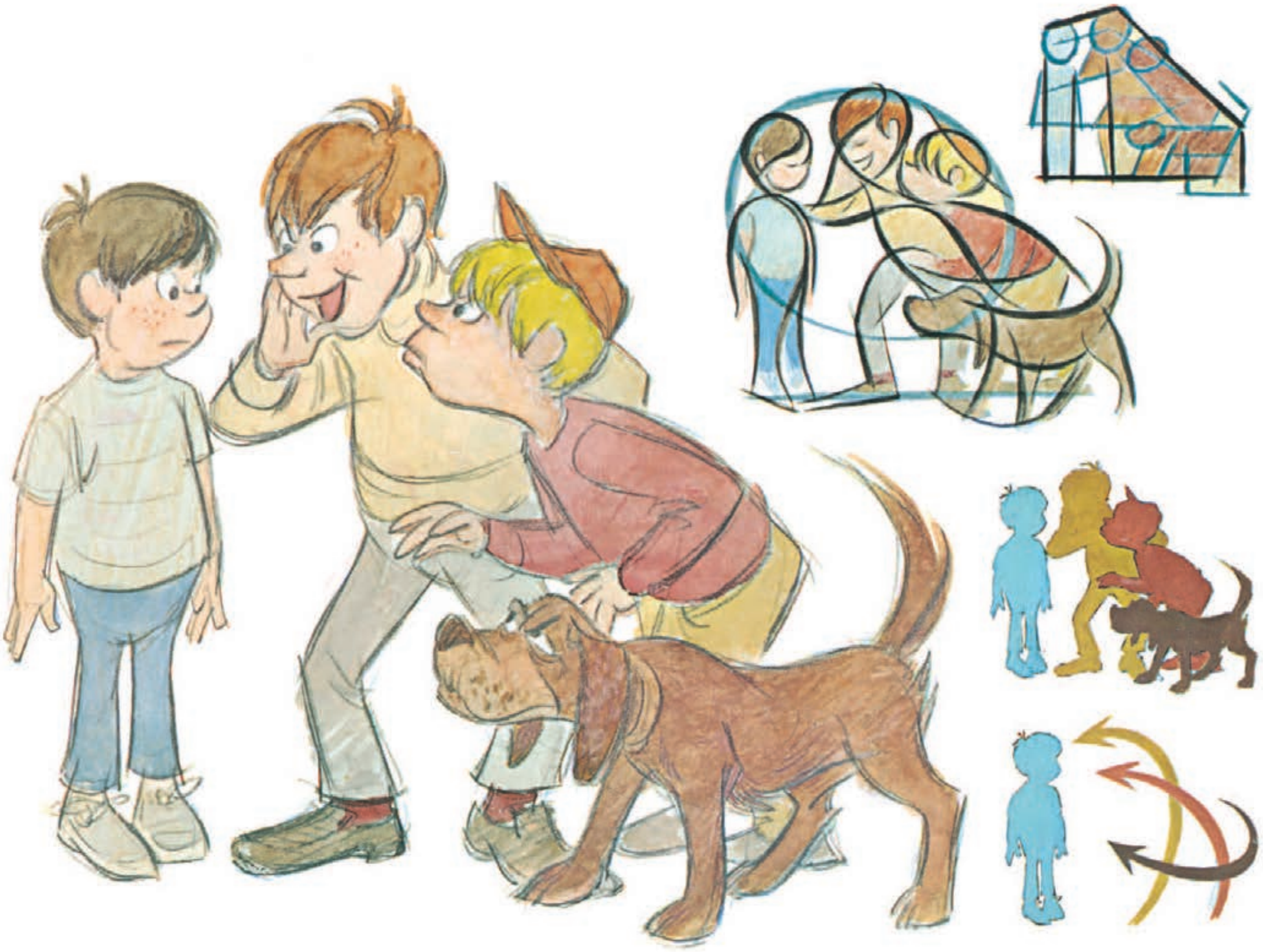
Practice drawing hands from every angle. Here is a formula for a hand. A box shape hinges from the wrist up or down, the arm turns it around, and the ball base of the thumb fits on. This thumb base is accented in cartoons. Notice that the short, straight lines in all of these drawings help define perspective.

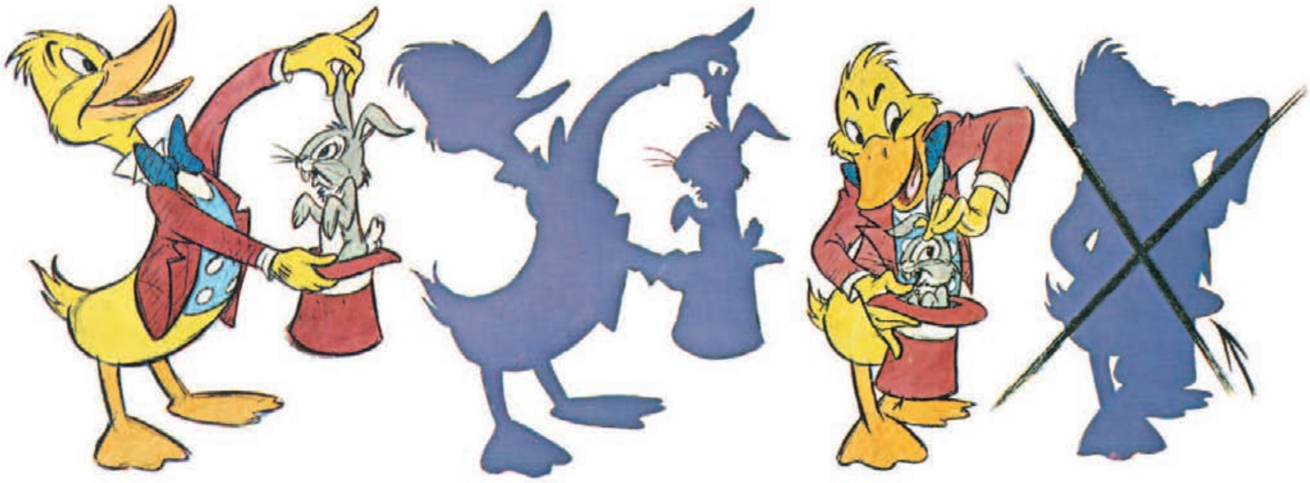


The different sizes and locations of the same size-related objects also create depth and foreshortening. See, for example, the big, medium, and small gnomes running and the hands and feet of the pursuing ogre here.

COMPOSITION

The drama portrayed by the composition first catches the eye, and then directs the eye to the center of interest by various devices. As shown below, the characters may bend forward and look at it, or the abstract design may point at it, intersect it, frame it, circle it, or bend around it (just as parentheses do). In a composition, the viewer's eye level is important when he looks at grandeur or big monsters from a worm's-eye view, or when he looks down at small things.





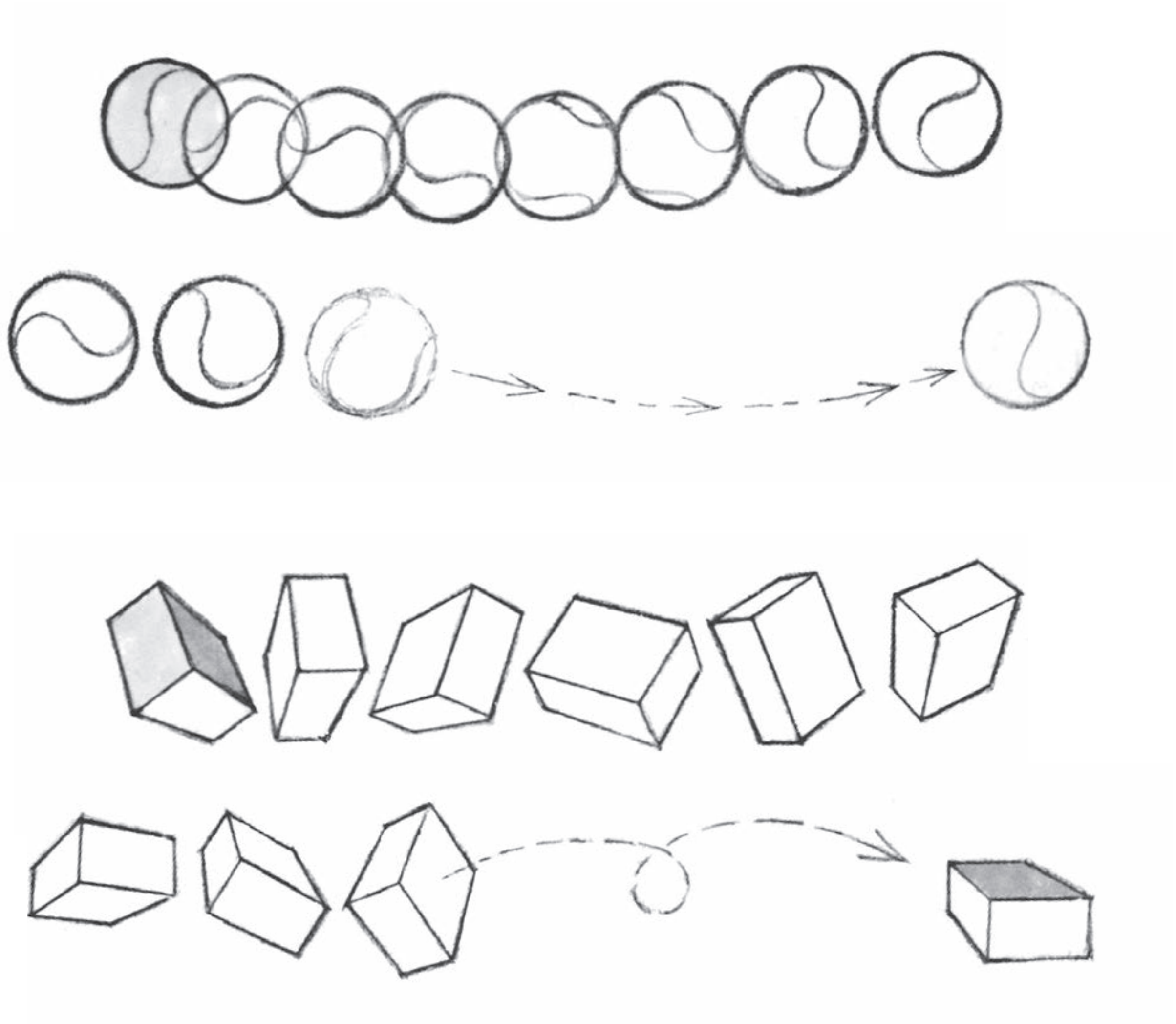
Appreciate the value of silhouettes to define and clearly tell the story in two dimensions.

ANIMATION METHODS

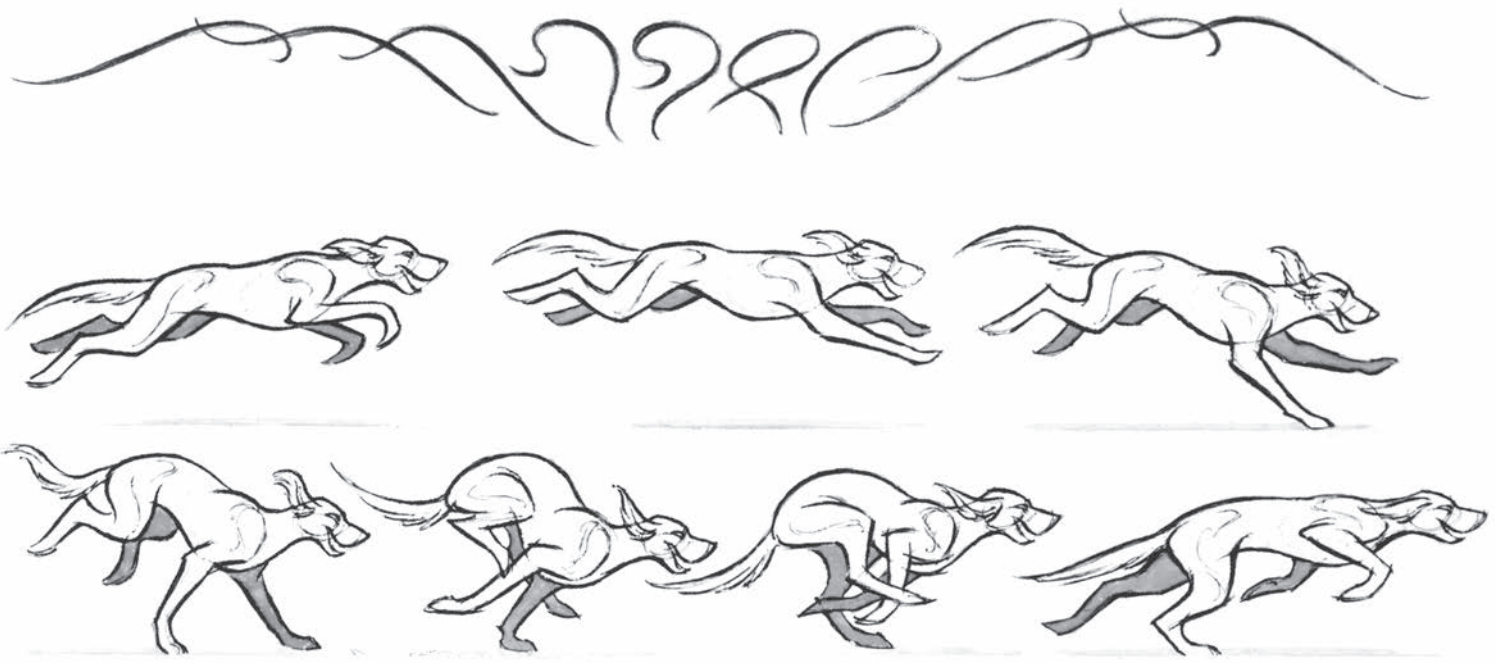
There are two distinct methods of animating: 1) the straight-ahead method, which simply involves drawing one move after another in an evolving sequence of growth, and 2) the pose-planning method, which is accomplished by sketching “key” or “extreme” poses and then filling in the action with in-between drawings. Most animators use the pose-planning method, but there is a time and a place for each animation approach.

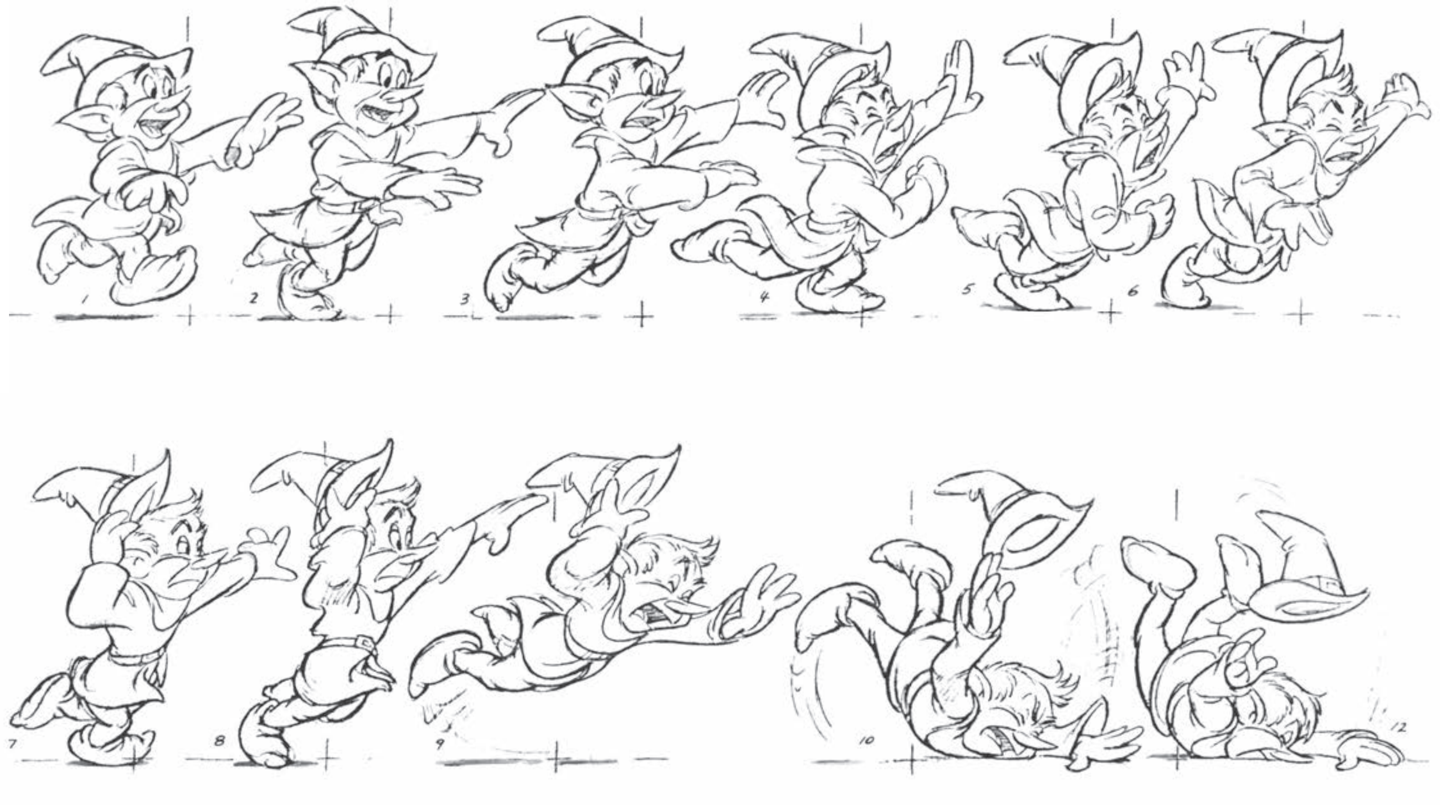
STRAIGHT-AHEAD

Straight-ahead animation (drawing each move from the beginning in a growth sequence) is used for actions that involve rhythms in character movements. There may be several overlapping secondary actions moving in a character (see page 106), and each one has a different timing and rhythm. They are started unevenly by turns, twists, and other body actions. They are impossible to pose-plan, and many are discovered as you animate straight-head. Start with a plan of action and work with rough sketch-scribbles and rhythm lines; aim for the sweep of the character. Keep a model drawing on a slip of paper to check sizes and scene perspectives.

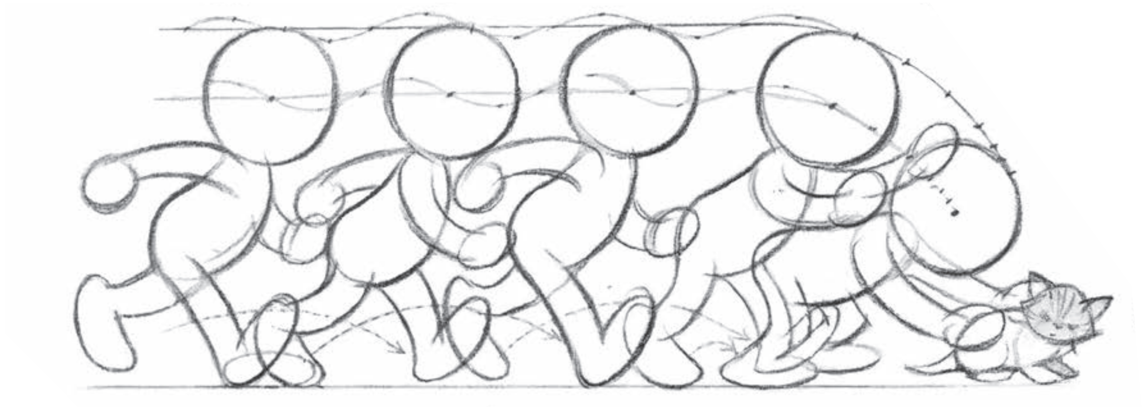


Visualize an entire scene with projection poses at the most important points. Then using these drawings as a guide, make paths of action (if practical) and animate straight-ahead from the start toward the first pose. When you near this pose, use it only as a guide and do not work into it unless it fits the rhythm progression of your action. Don’t hesitate to revise; discover improvements as you progress.

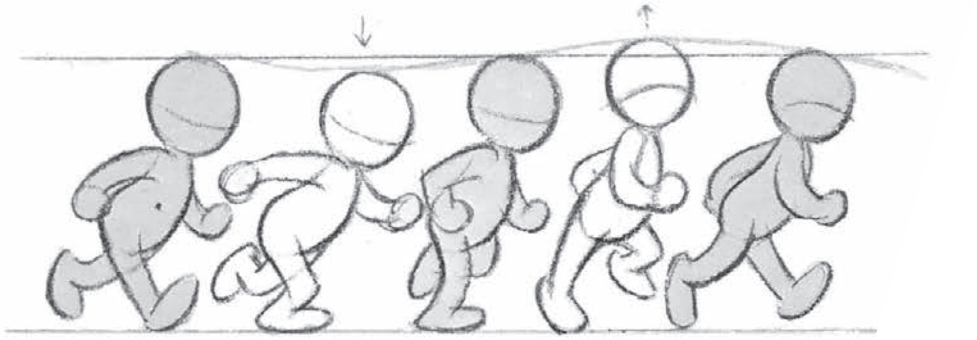


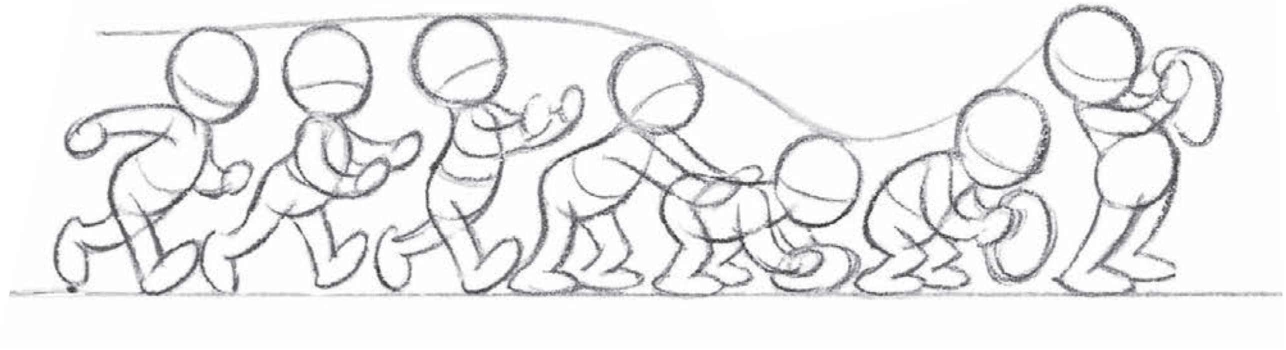


Notice how this smooth-flowing “rhythm pattern” relates to the animation cycle of the dog in the top two rows above. The smooth movement of the little character in the bottom two rows is broken when he falls.



The character above walks for three steps and then reaches down for the kitten; here the foot contact extremes are placed in a straight path of action. The character below anticipates the reach for the kitten by lifting the arms and moving the head back. The head stays back to counterbalance the reaching arms; it then follows through in an overlapping action as the kitten is lifted. The walk is an overlapping action.





Trying a Traditional Animation Technique

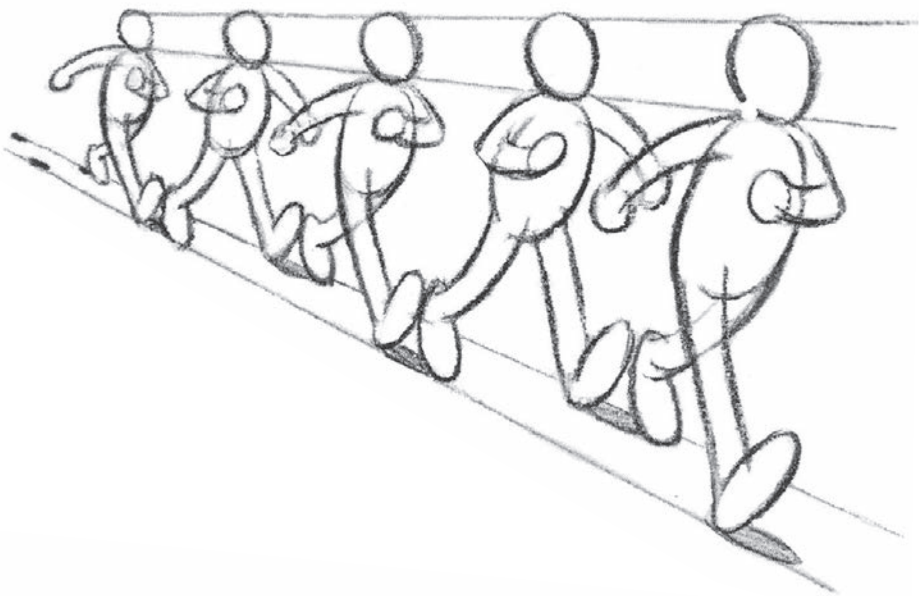
In traditional straight-ahead animation, the animator works on multiple images at once by placing the different pages on top of one another. The tops of the pages are held in place with pegs on the animator's desk, and the animator flips between them for reference. Bottom pegs are not adaptable to this type of animation, as flipping from the top edge is difficult and cumbersome. The animator may go back and change whole actions in the drawings that lead up to the drawing they are working on.

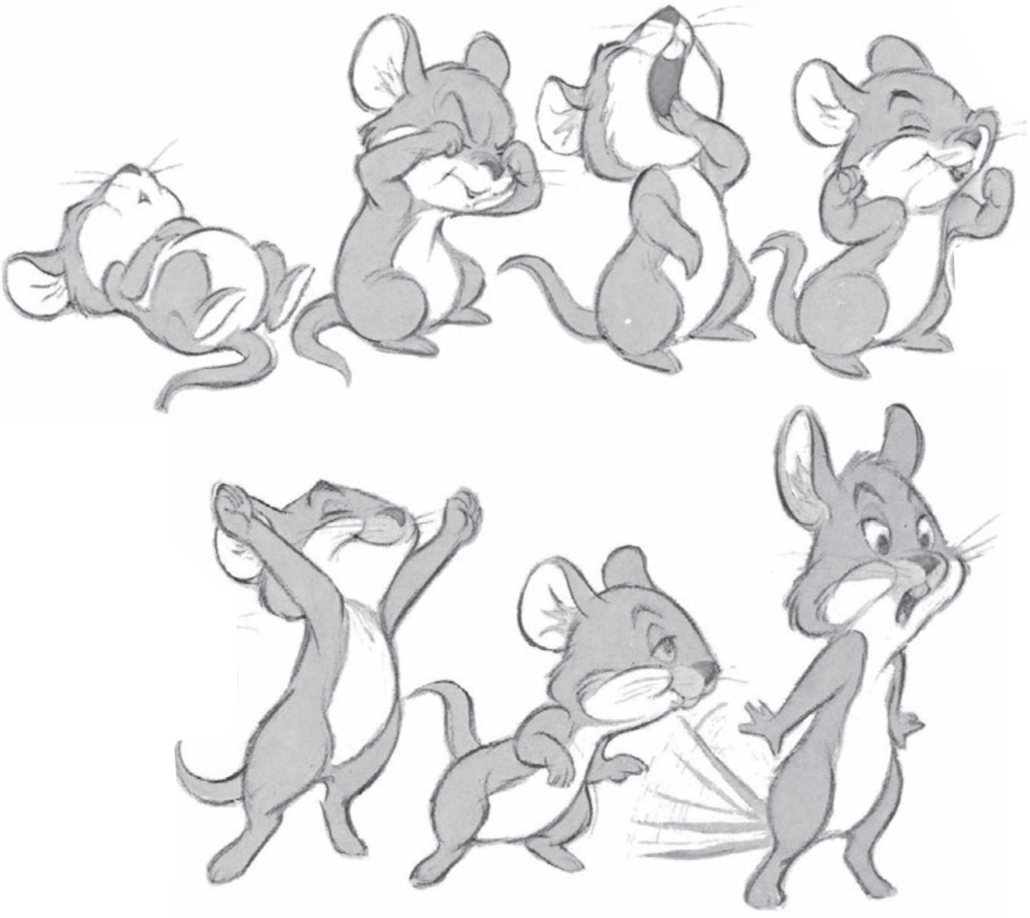
When the animator has completed the scene, each drawing is photographed two times for a rough film test (twelve drawings are viewed in one second on the film). The animator then uses a projection machine to analyze the action to decide whether each frame fits or not. He or she then makes any necessary changes.

Through this process of animating and film testing, the animator learns how to time and space the drawings to achieve the proper speed in each of the primary and secondary actions that simulate reality. With time, the animator also learns how many drawings are needed to register and see anticipations, poses, and reactions. On film, viewers do not see just one of the drawings; instead they see the sequences.

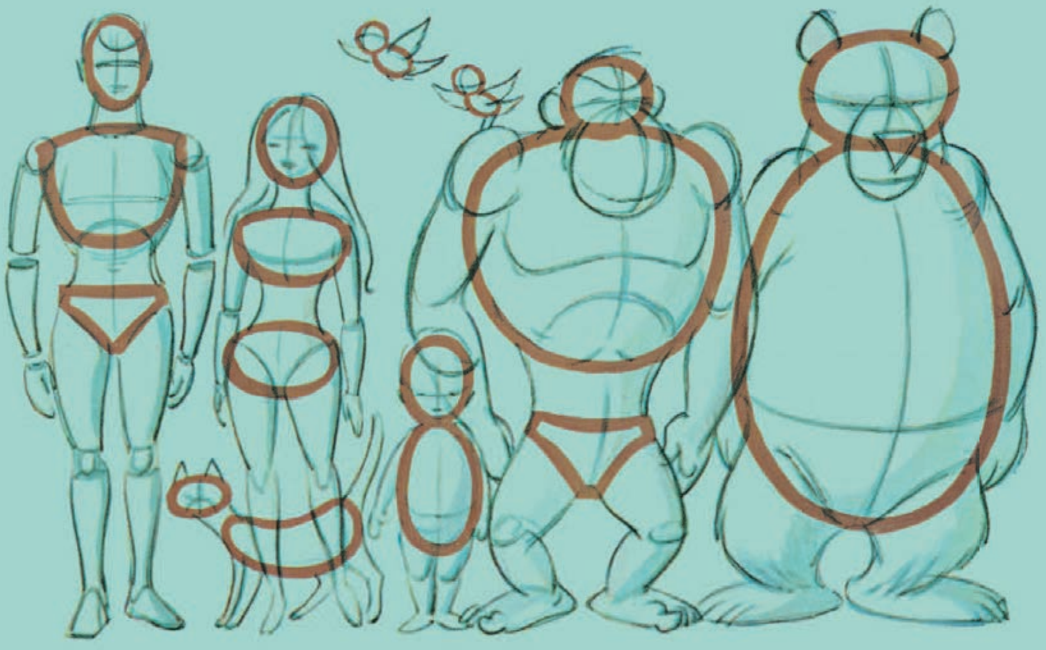
POSE-PLANNING

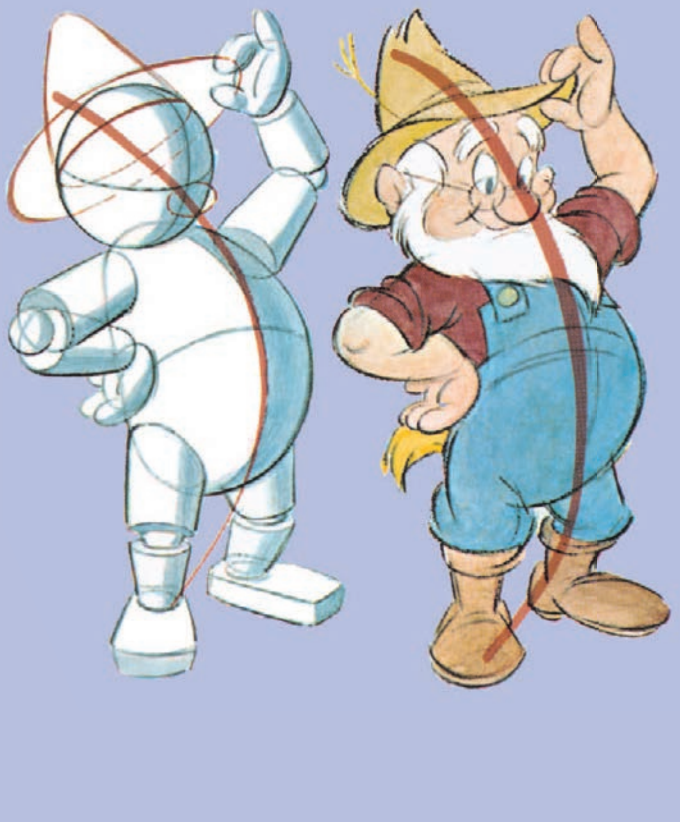
Plan well-defined actions (such as a walk or run) by first drawing a path of action using perspective and then rendering the same cycle drawing in progressive positions. The in-between drawings are planned with spacing charts (which also indicate the "arc" of the action in case other artists complete the scene) and roughed in by the animator. The in-betweens can radically change an action—either improving or stunting it.

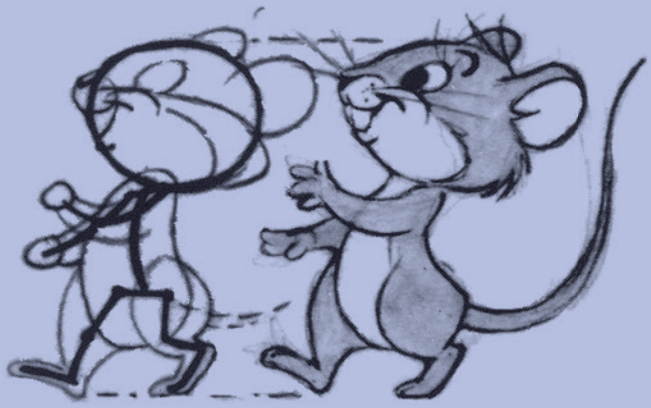




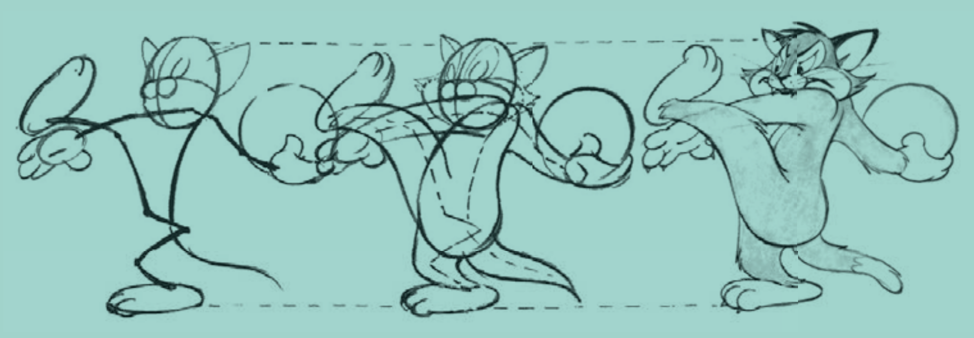
The mouse in this example demonstrates the importance of pose planning. These types of scenes are based on the drama, gesture, or attitude of poses—not the specific action. The key poses must be carefully thought out because they are used to enhance the action, presentation of drama, and mood; they reinforce the story, scene composition, and drawing points.



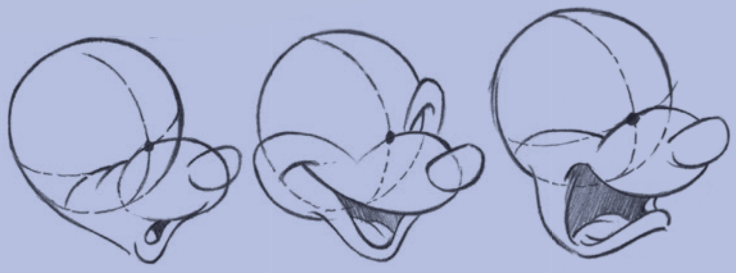


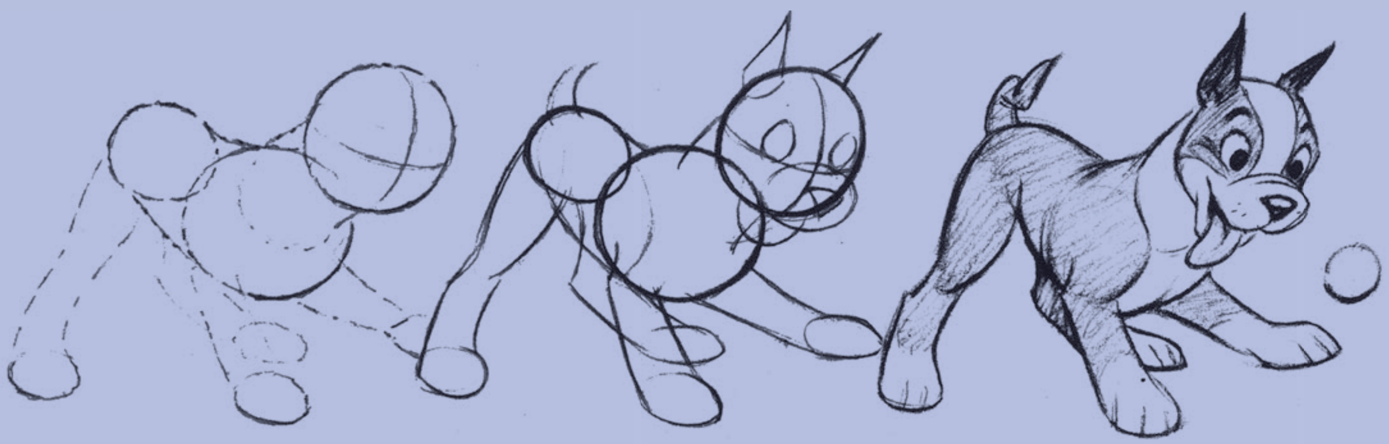


CHAPTER 2



CARTOON CONSTRUCTION



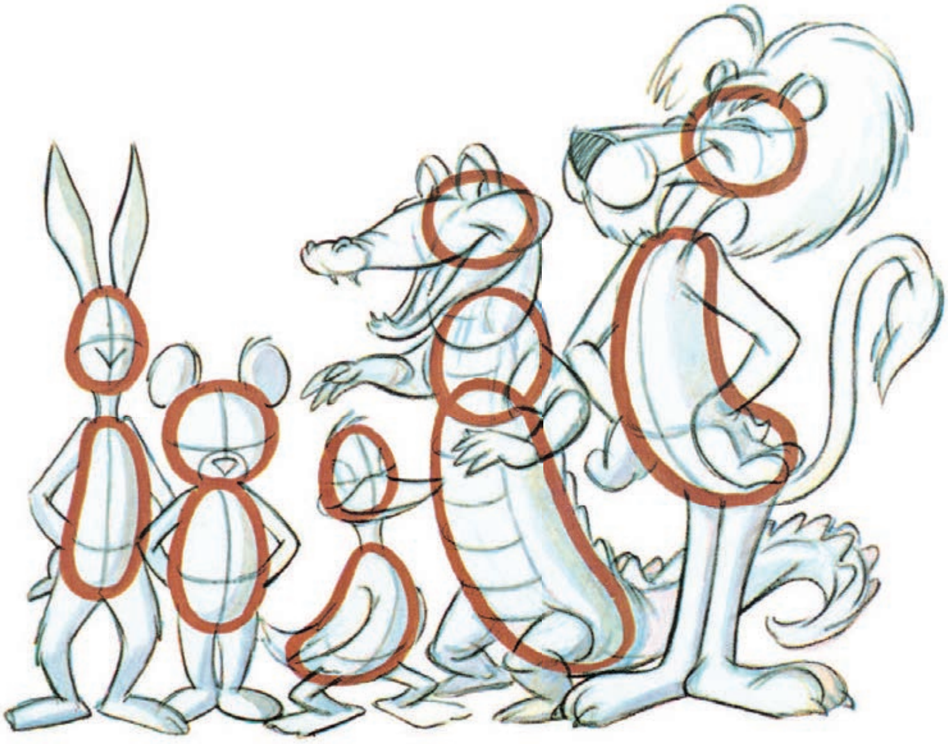


PARTS OF A CARTOON CHARACTER

A cartoon character consists of a body, a head, facial features, and hands. This may sound simple, but drawing all these parts in proportion, the same way in each frame, and drawing the cartoon as a believable living character can make or break an animated sequence. This chapter discusses each of these important parts of a cartoon character in detail, beginning with the body. Knowing how each of these parts works in animation will give you a good foundation before developing your own character designs in chapter 3.

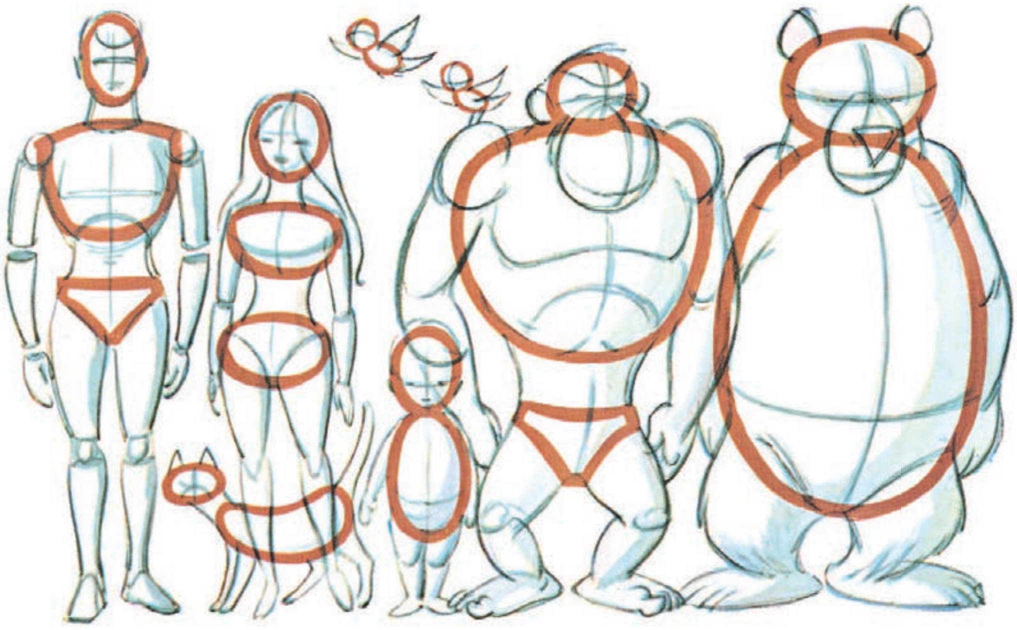
THE BODY

Proportion is one of the most important factors to consider when constructing a cartoon character. The animator must keep in mind the relative sizes of the body parts because specific proportions are used to create character types. For example, the heavy, pugnacious character has a small head, large chest or body area, heavy arms and legs, and the jaw and chin normally protrude. The cute character is based on the proportions of a baby with a large head in proportion to the oval body, a high forehead, and a small eye, mouth, and chin area. "Screwball" types have exaggerated parts and features. Detailed information on character types begins on page 42. The proper use of cartoon proportions makes a character, so analyze the proportions of your animated actor before he or she goes on stage—up on the screen.

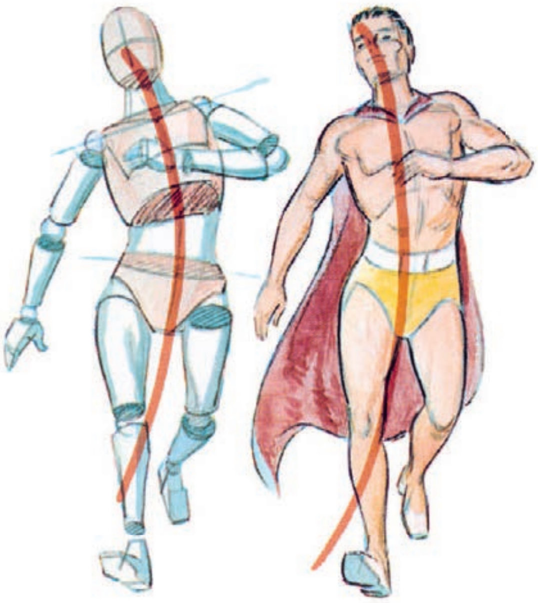


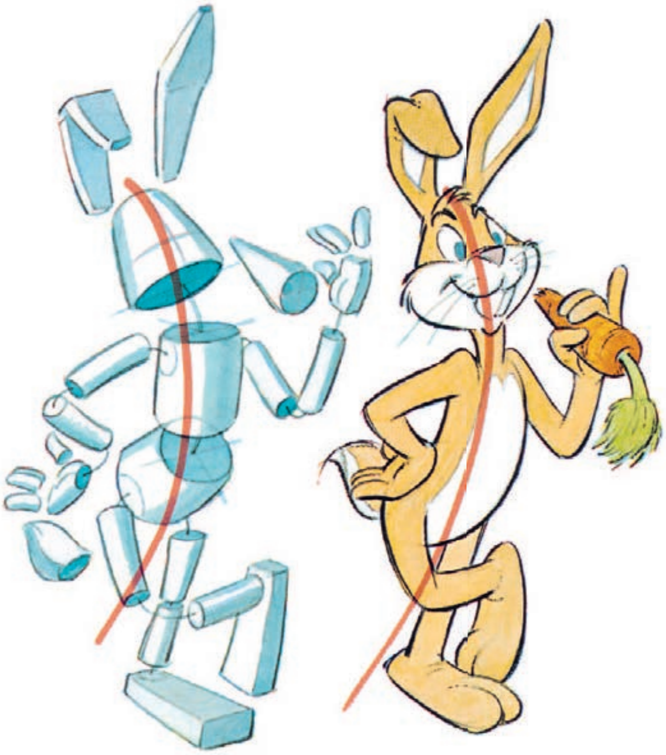
Measuring in "Heads"

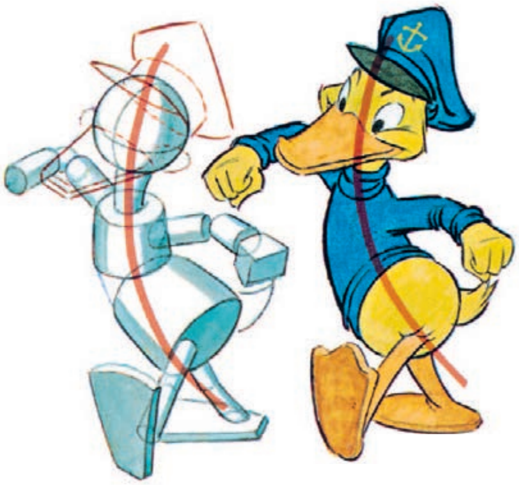
Cartoon studios often use head size to measure the height of a character. For instance, a cute bear may be three heads high, and a pugnacious bear might be five or six heads high. This information helps the animator to keep the proportions and height of a character consistent. Study the characters on this page and measure each one in "heads."

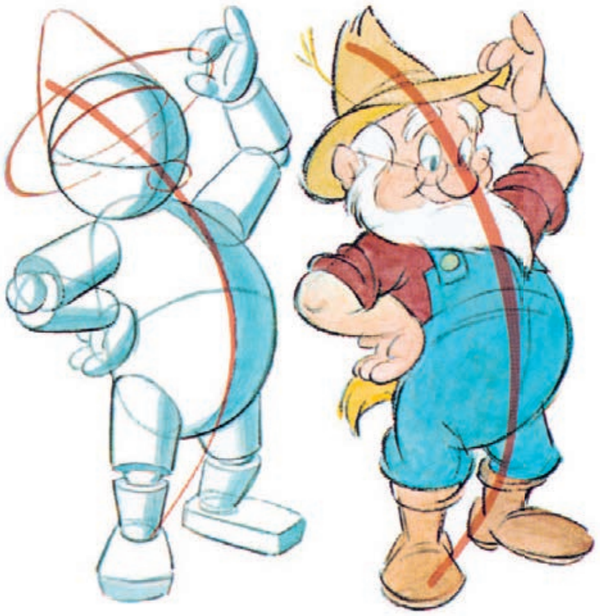


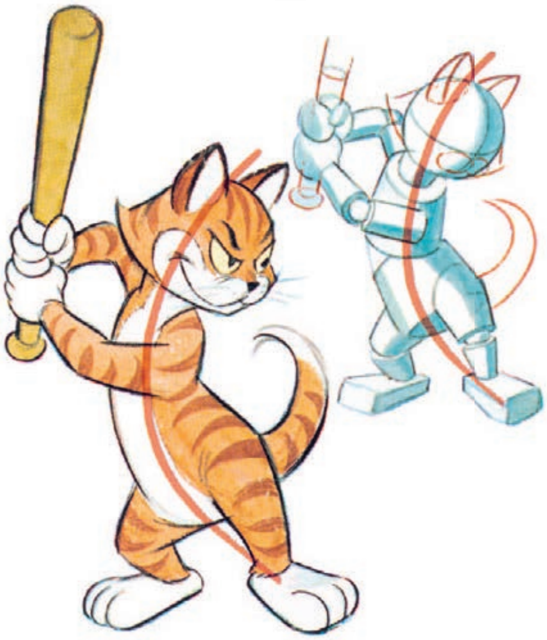
Draw a "line of action" through the three-dimensional parts to organize and set the attitude or action. Construct your drawing as if you were fitting together the parts of a puppet at the joints according to a character formula. Thus your character becomes believable, and when he or she acts, the audience emotionally responds.

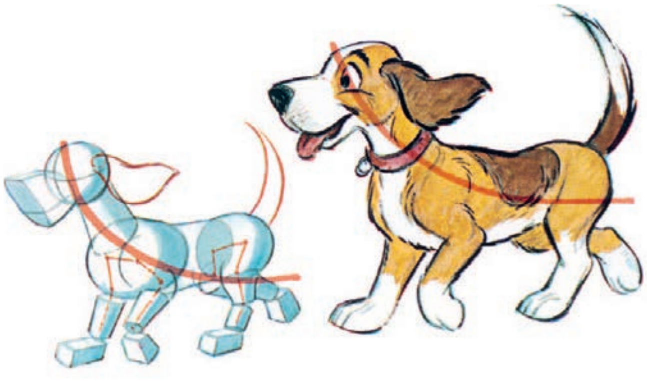






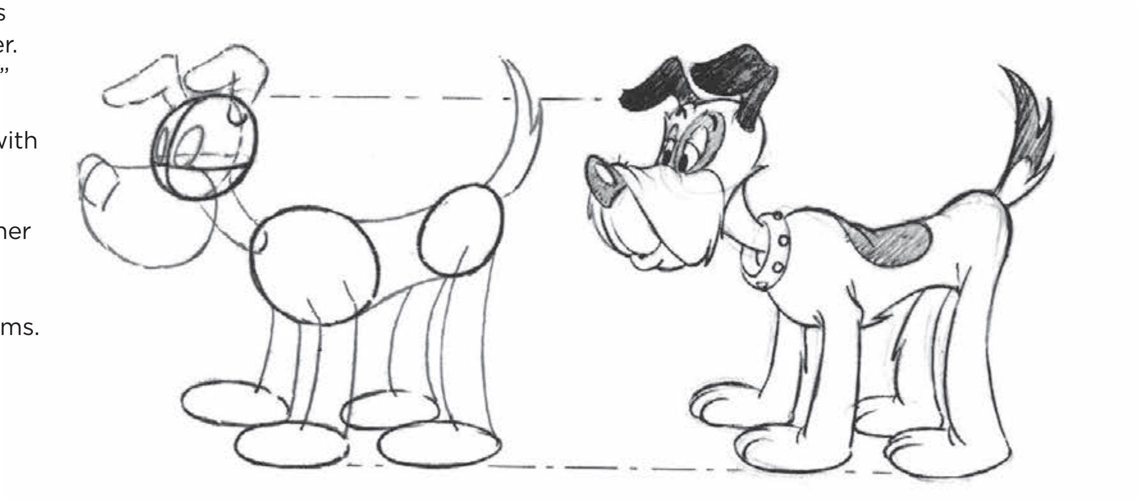


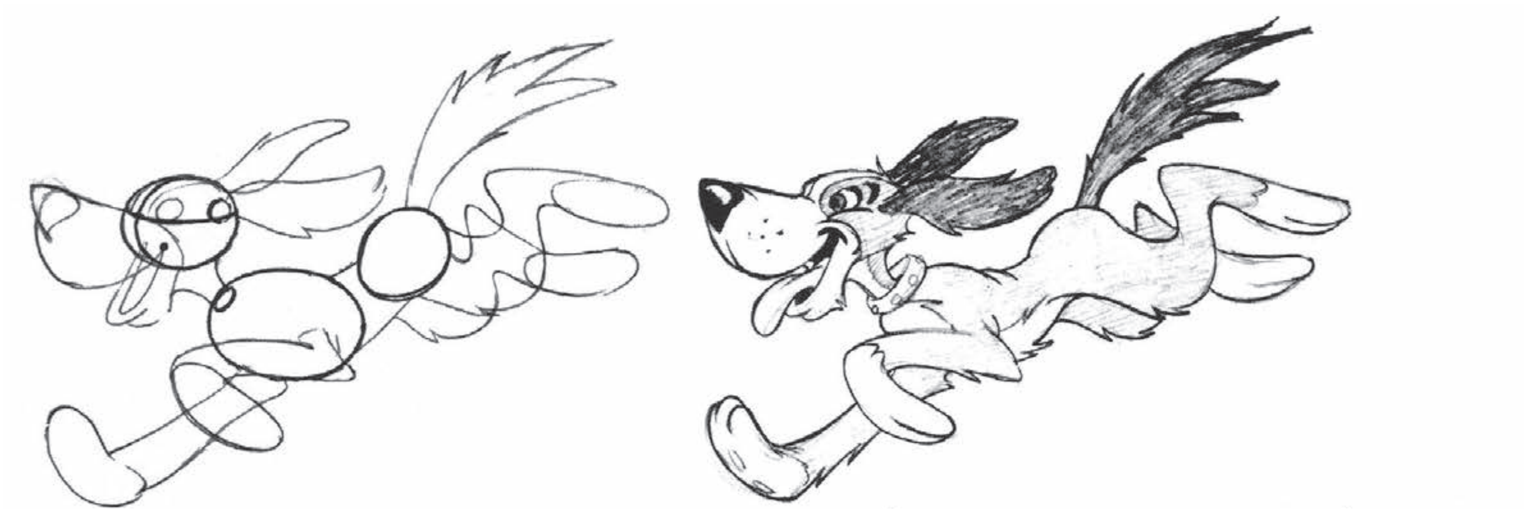


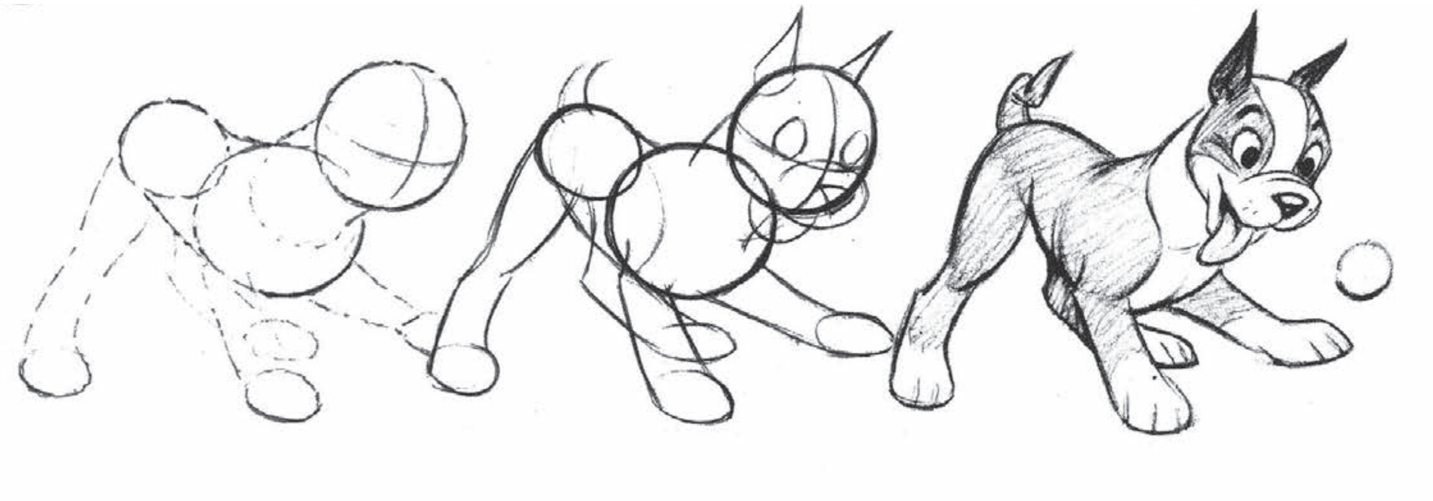


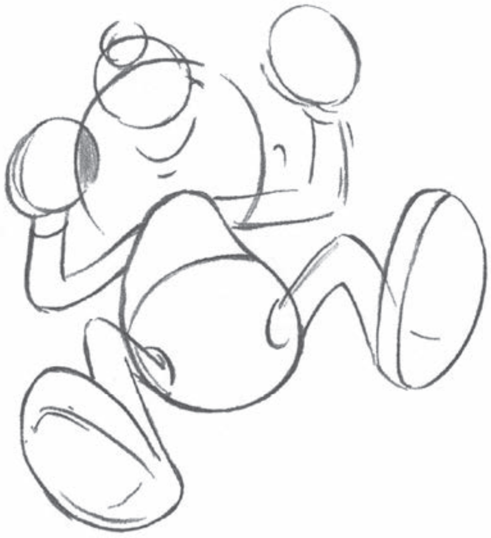
The animated cartoon character is based on the circular, rounded form. In a cartoon studio, several people may work on the same drawing, and the rounded form is used because of its simplicity—it makes animation easier. Also, circular forms “follow through” better on the screen. As you draw, visualize all forms as solid masses with three dimensions.

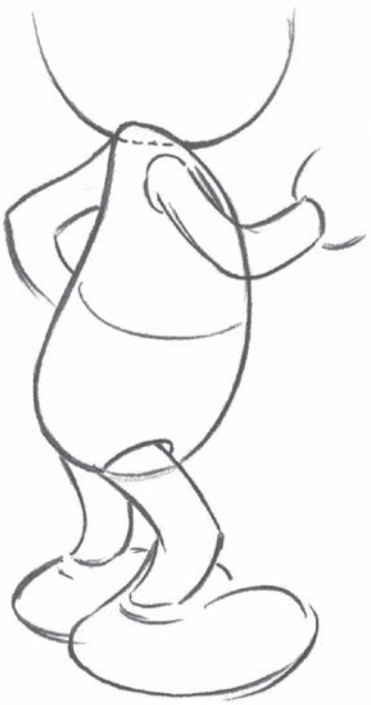
The parts of the character fit together at socket points. These examples demonstrate the effectiveness of combining circular and rounded forms. The rounded, pear-shaped bodies support the circular heads and add interest to the overall character.

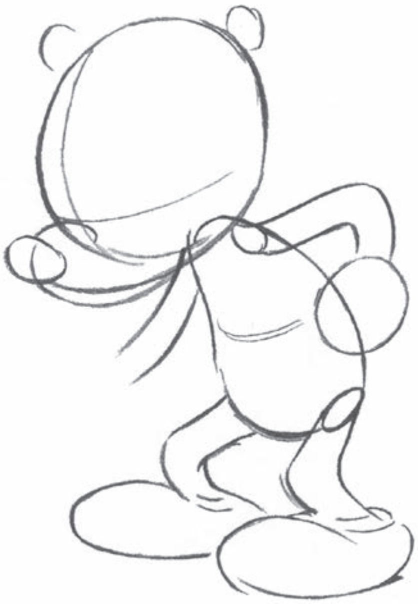


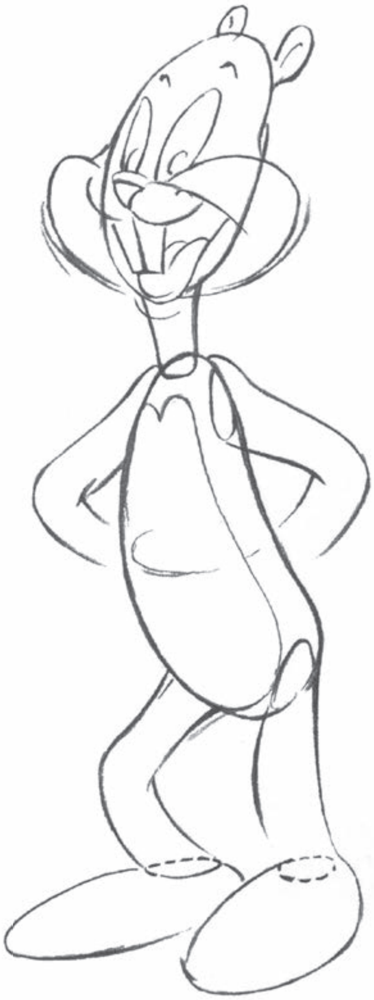


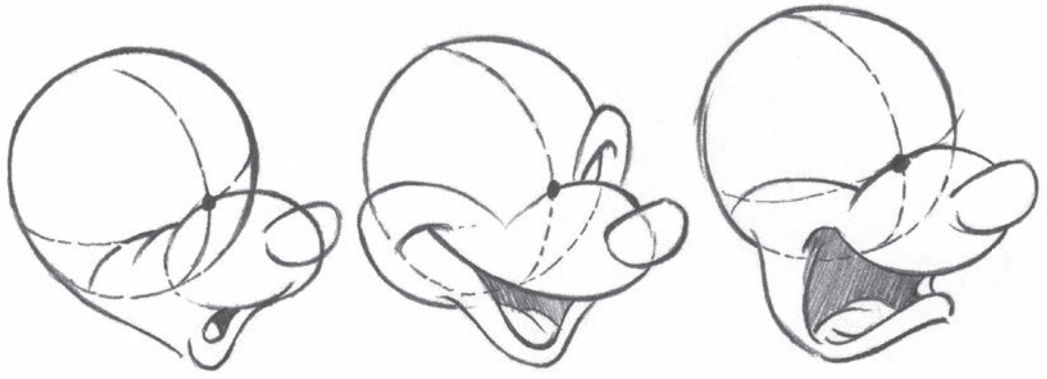








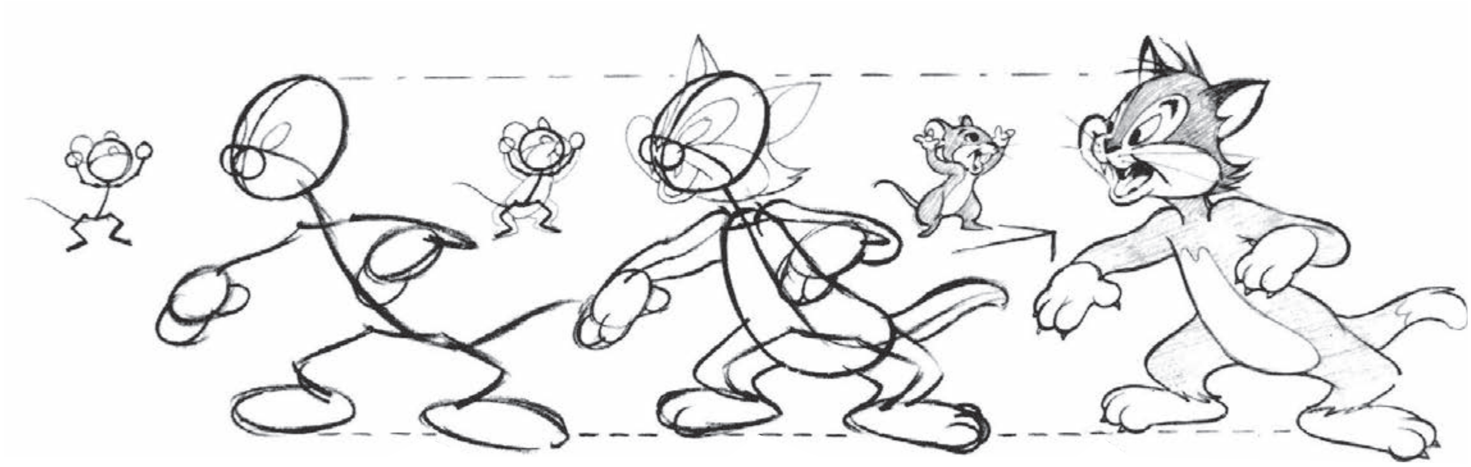


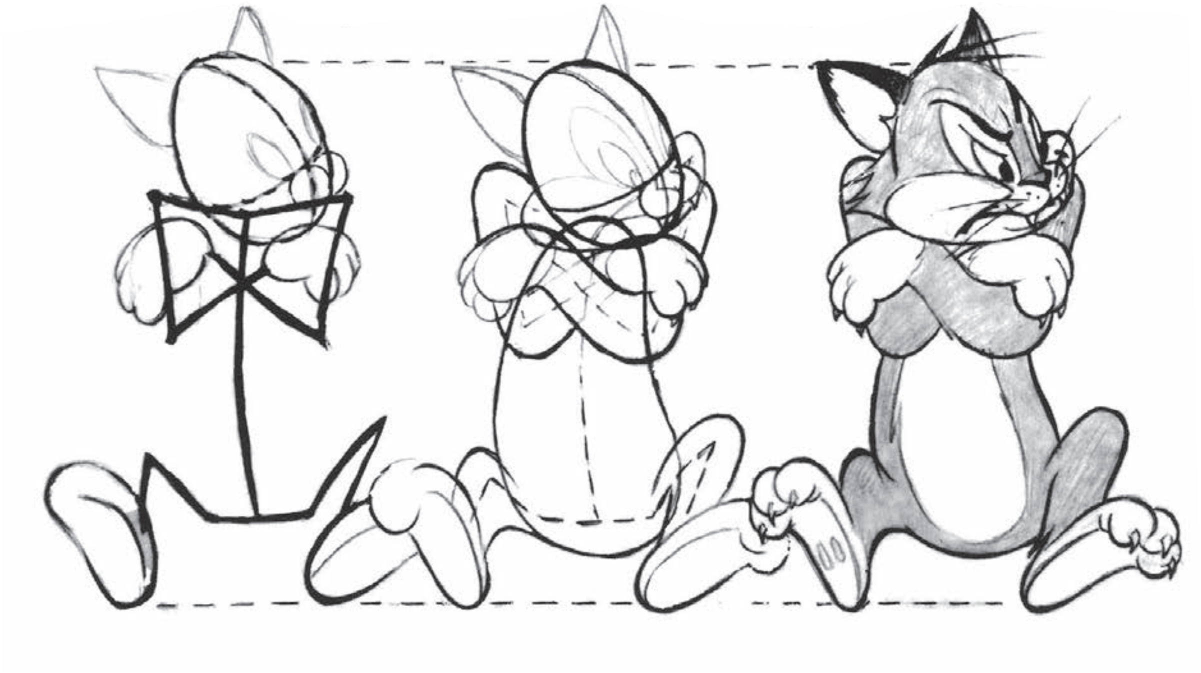


Locate sockets according to perspective guidelines.

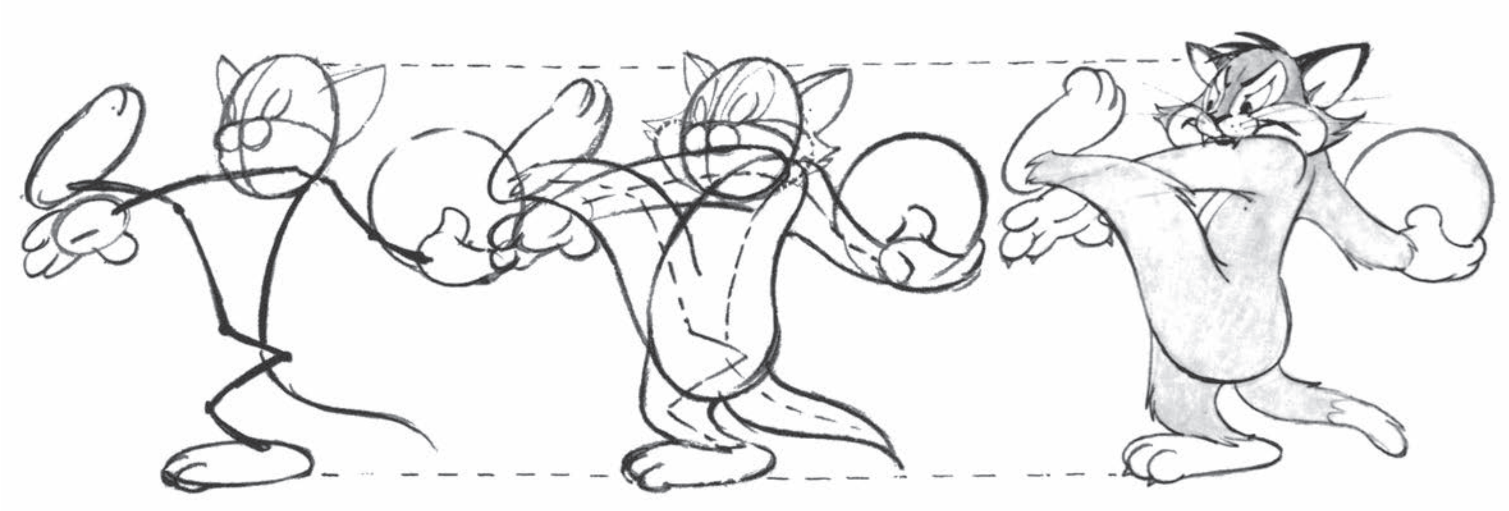
THE SKELETON FOUNDATION

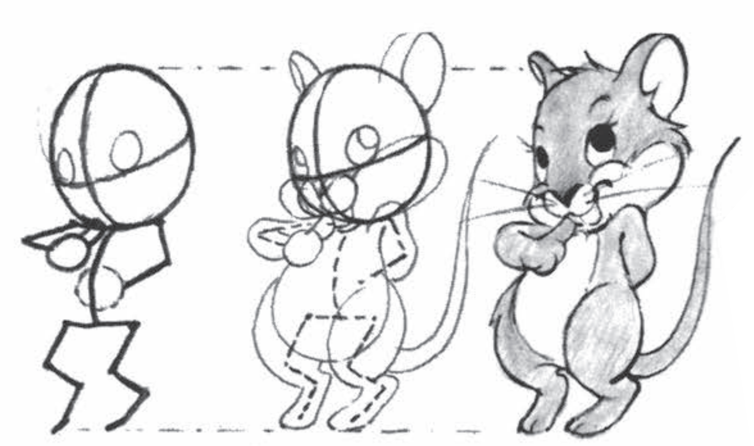
Build the cartoon from a rough skeleton, but don't expect to always get the skeleton right on the first try. Nobody can do that! Experiment, discard, and make several drawings. Then pick the best one. Be sure to work loosely when constructing the character.

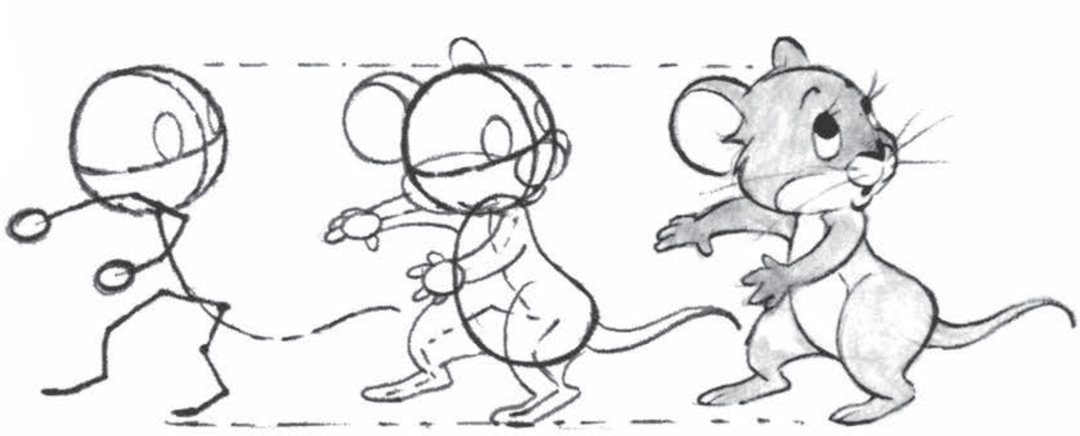


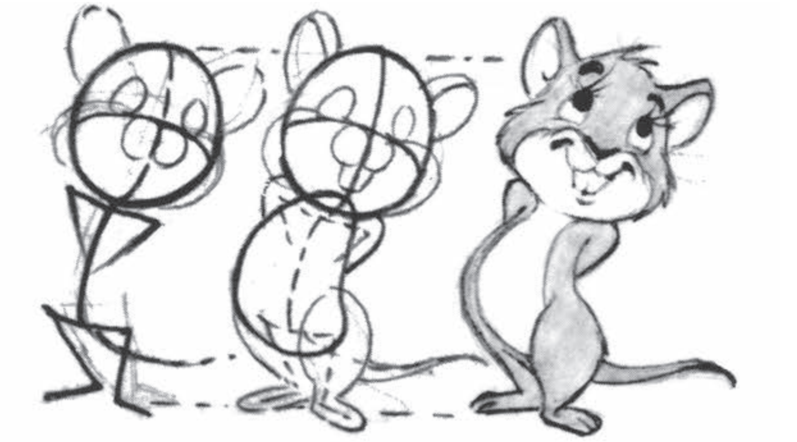


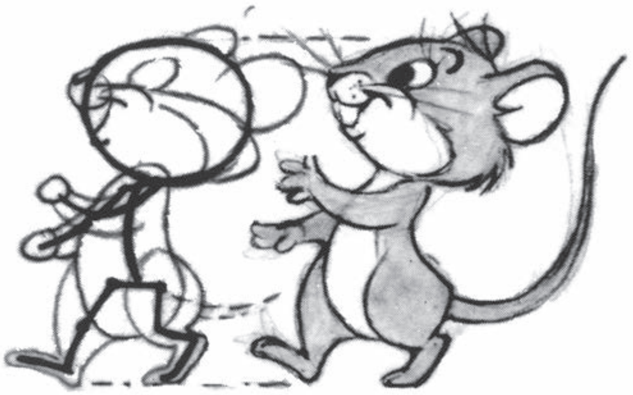
Work out a skeleton, construct body masses around it, and then build details over the masses.





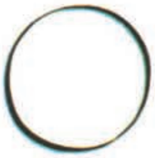




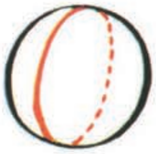


THE HEAD

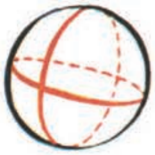
Think of the head as a rounded mass: It is ball-shaped, pear-shaped, or egg-shaped. In animation the head shape may change perspective and form many times during a scene. To simplify matters, animators must first draw a framework in proper perspective. Then they construct the details over this form. Cartoon studios often make small clay models to help the animators draw difficult characters from different angles.



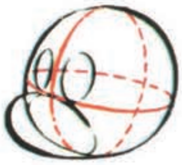
Step One Start with a ball shape.



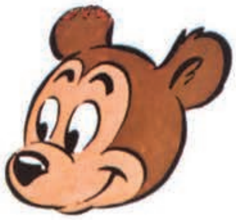
Step Two Draw an elliptical guideline around the first shape that will divide the face in the middle lengthwise. This determines the tilt of the head.



Step Three Draw the eye guideline at right angles to the second circle. This sets the face up or down.

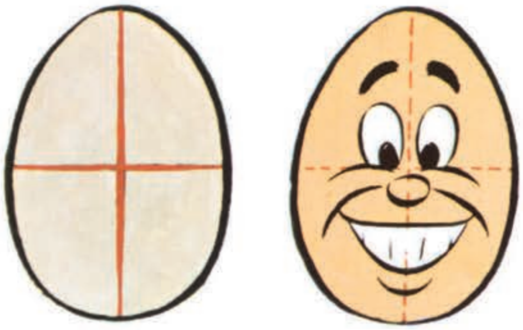


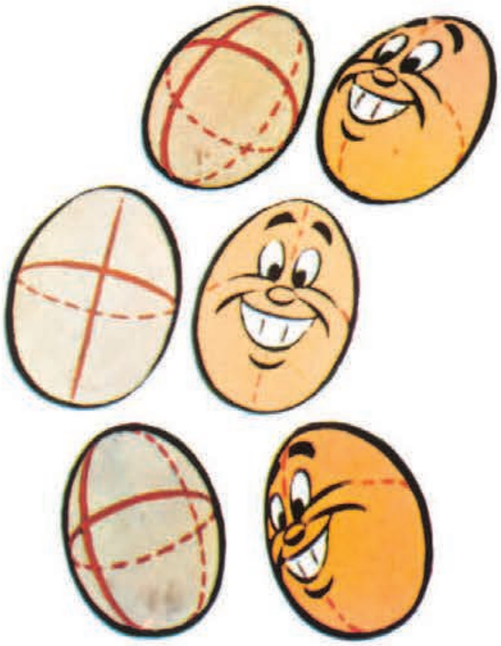
Step Four The base of the eyes and the top of the nose tie into the eye line. The perspective makes the left eye bigger than the right eye.

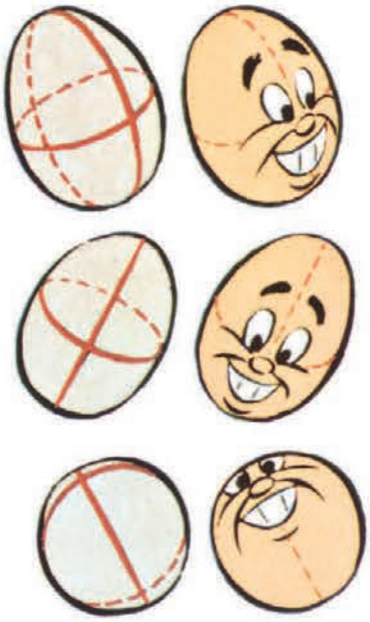


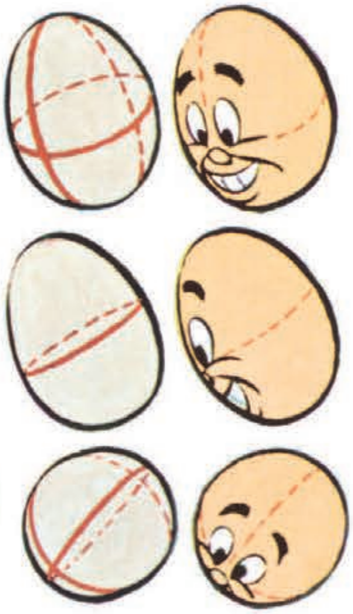
Step Five Now the details are drawn over the framework.

The egg is the basis of a great many cartoon heads. Draw an egg shape and the guidelines inside it, and then draw the face. Turn the egg in various positions and draw the same face. Watch the perspective change as you tip or tilt the egg model.

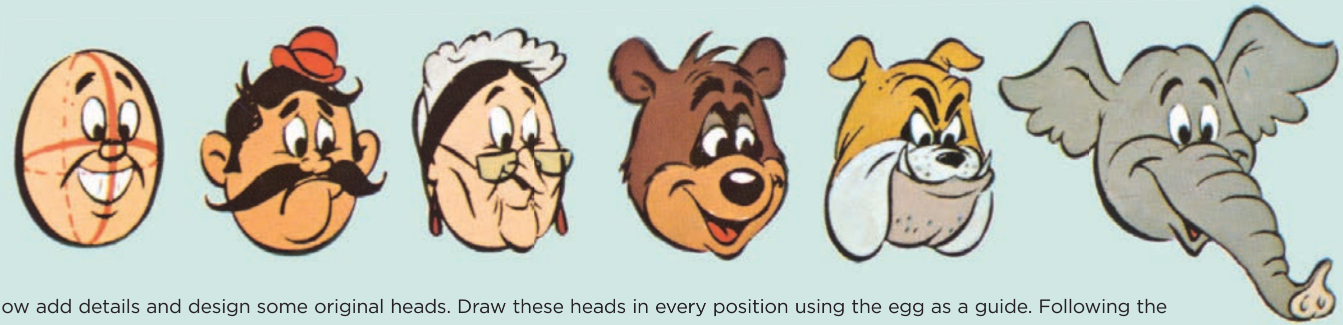




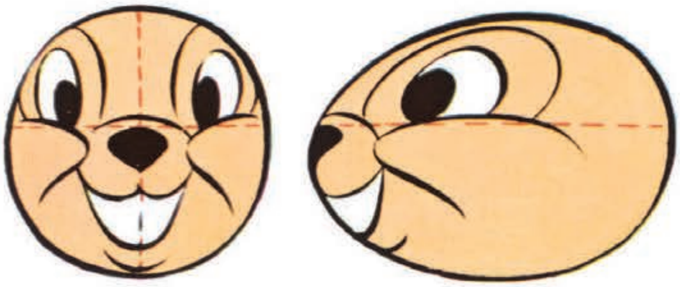


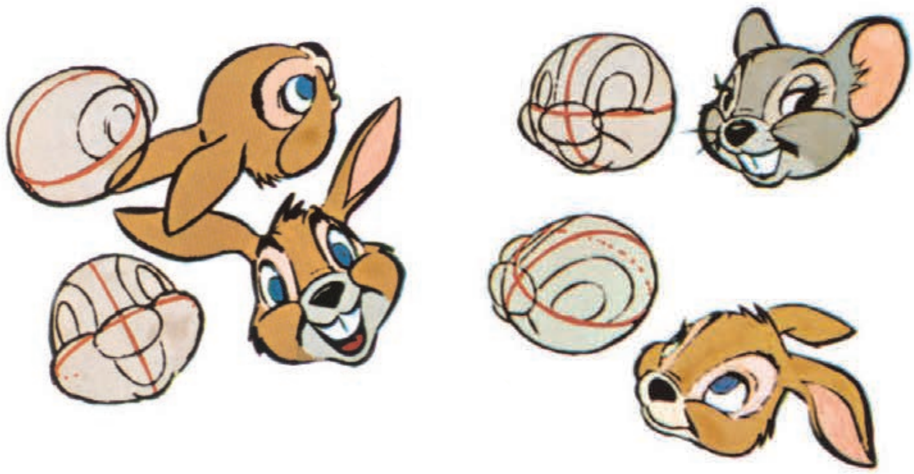


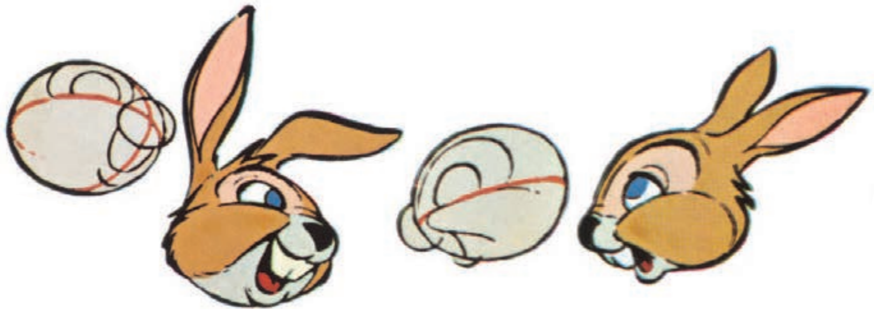
Putting the Egg into Practice

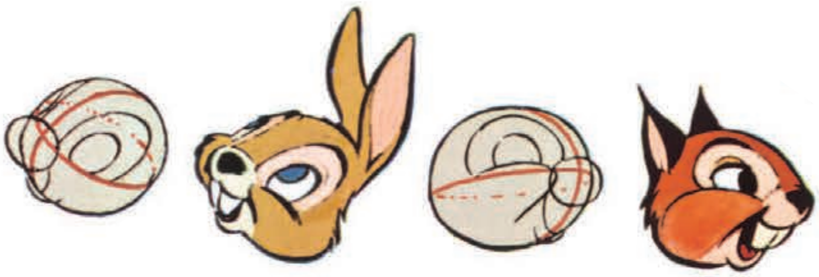


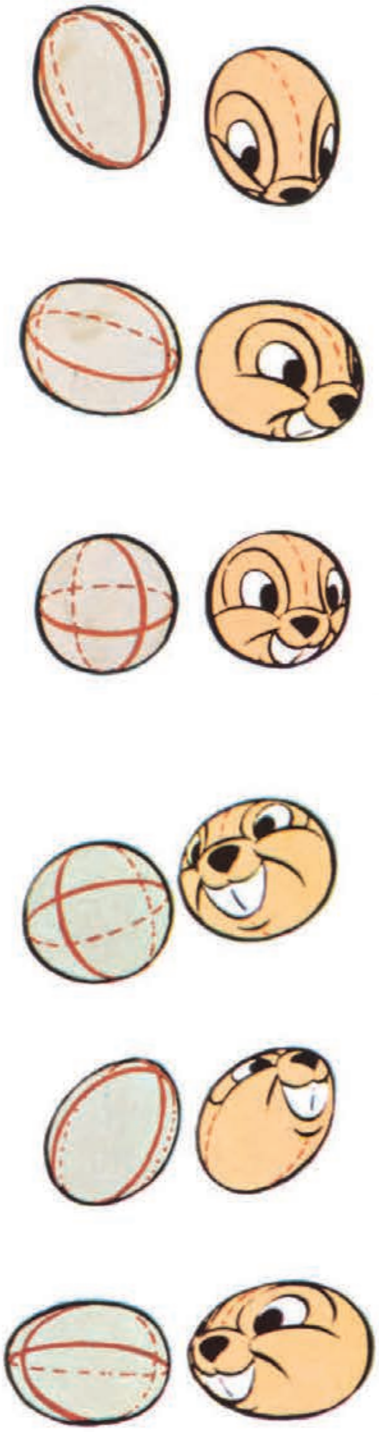
Now add details and design some original heads. Draw these heads in every position using the egg as a guide. Following the center and middle guidelines will help you construct heads.



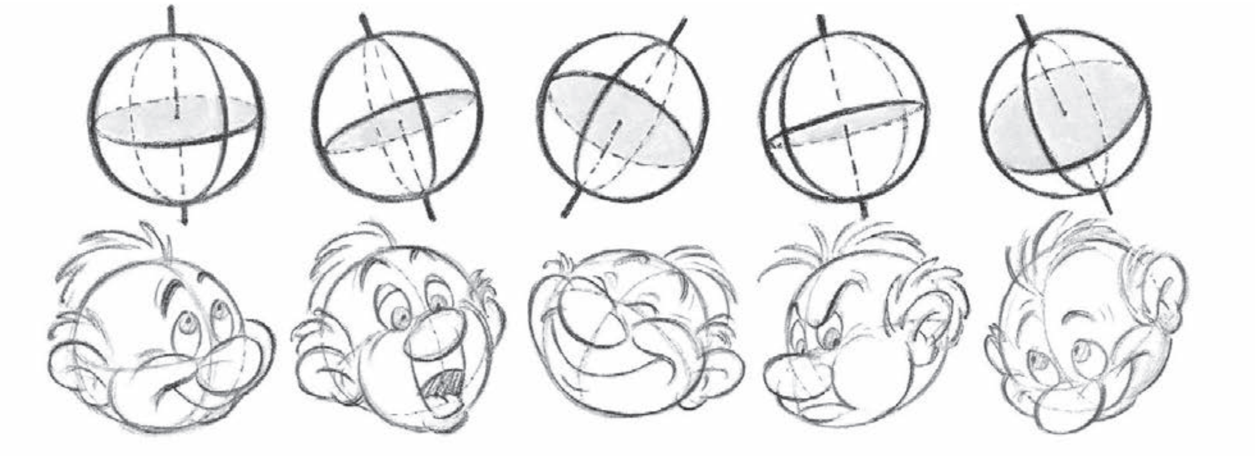




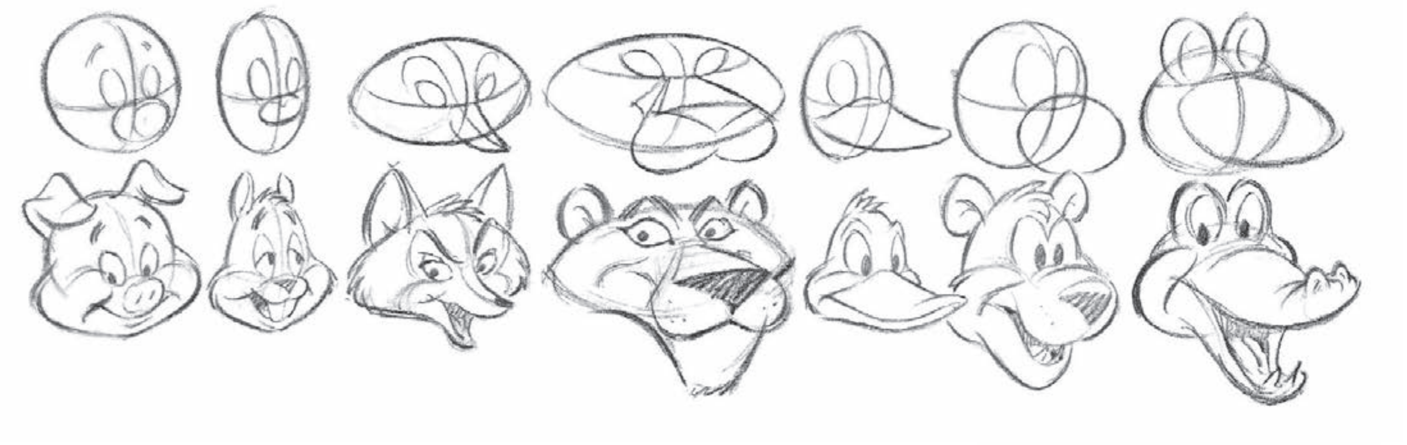




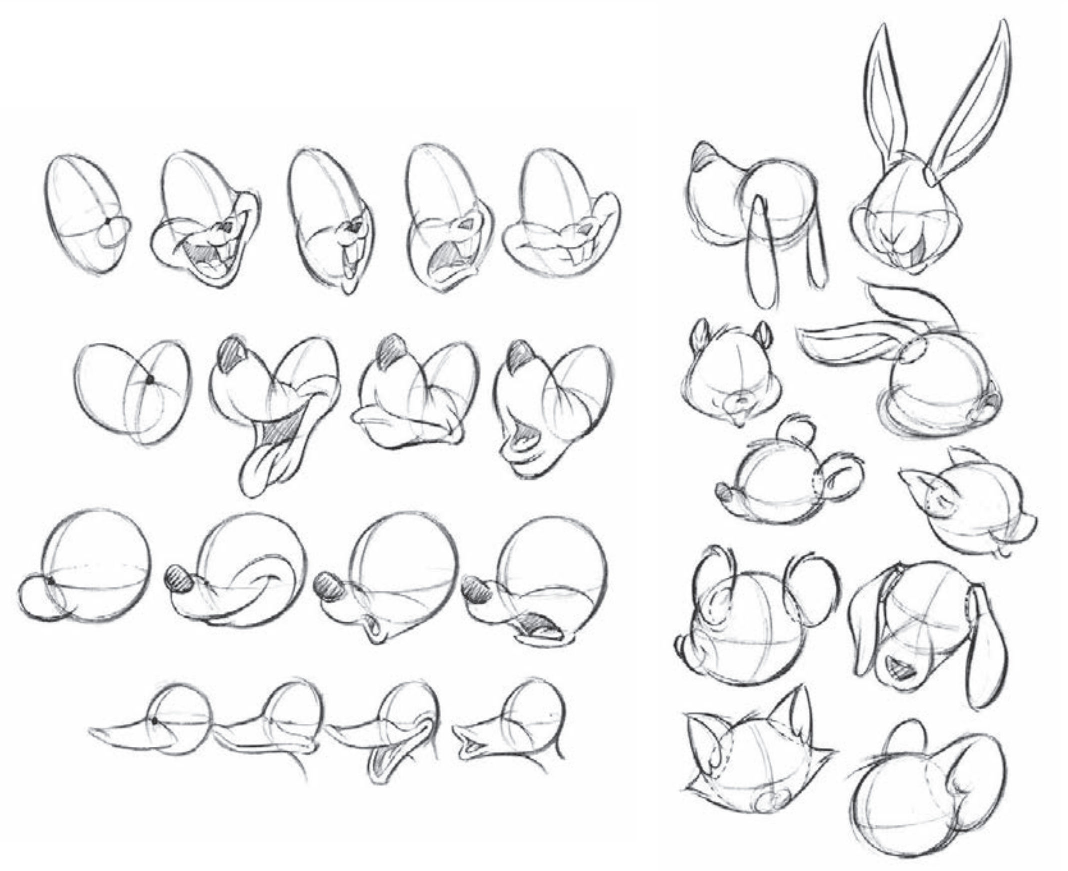
Head construction The cranium mass can be ball-, oval-, or pear-shaped, depending on the character. The horizontal guideline can circle the center, upper, or lower part of this mass. The eyes fit above the line; the nose area fits below. These features remain fixed to the head as part of the cranium mass.



Tilt Draw the vertical and horizontal guidelines around the head mass. These lines set the perspective tilt of the head, which is the basis of many expressions. The tilt changes constantly, especially in important dialogue scenes. Anchor the eyes, the nose, and the ears to these guidelines.



Flexible features
The mouth and cheek masses are flexible, and, as the jaw moves, they take on many different shapes, creating various expressions and mouth positions in speech. The eyebrows and the ears are also flexible, but the base of the ears and the nose remain fixed to the head. The eyes are flexible within fixed sockets.



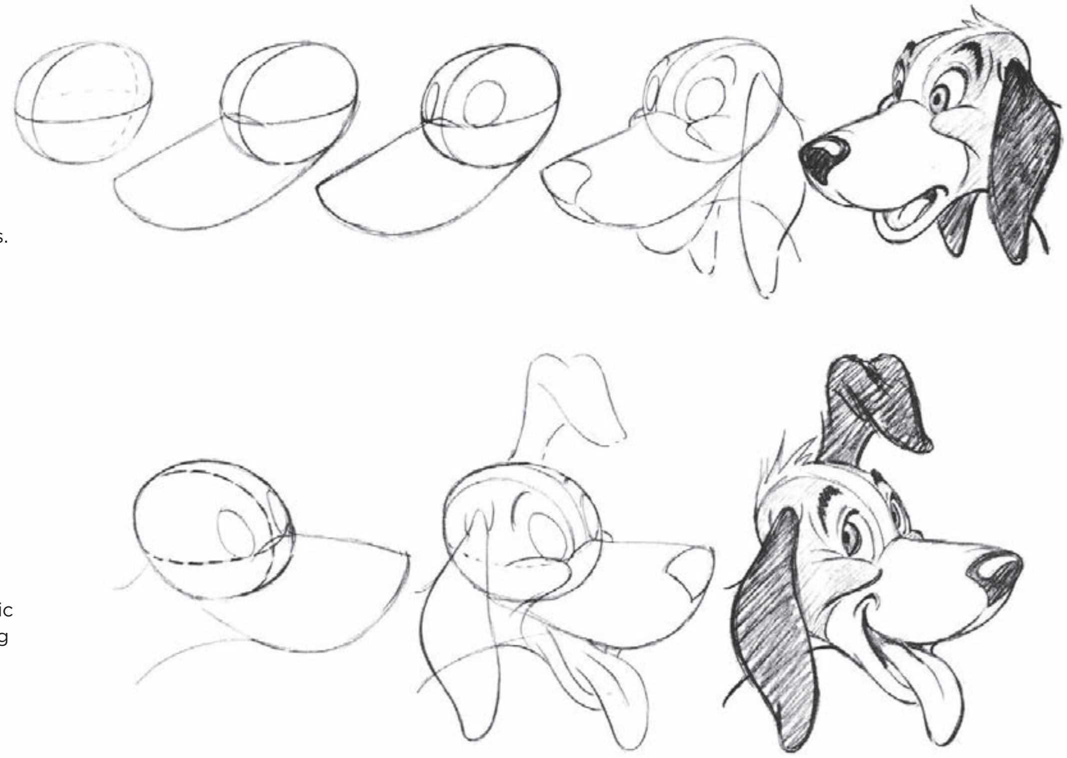
Step One Draw an oval with perspective guidelines.

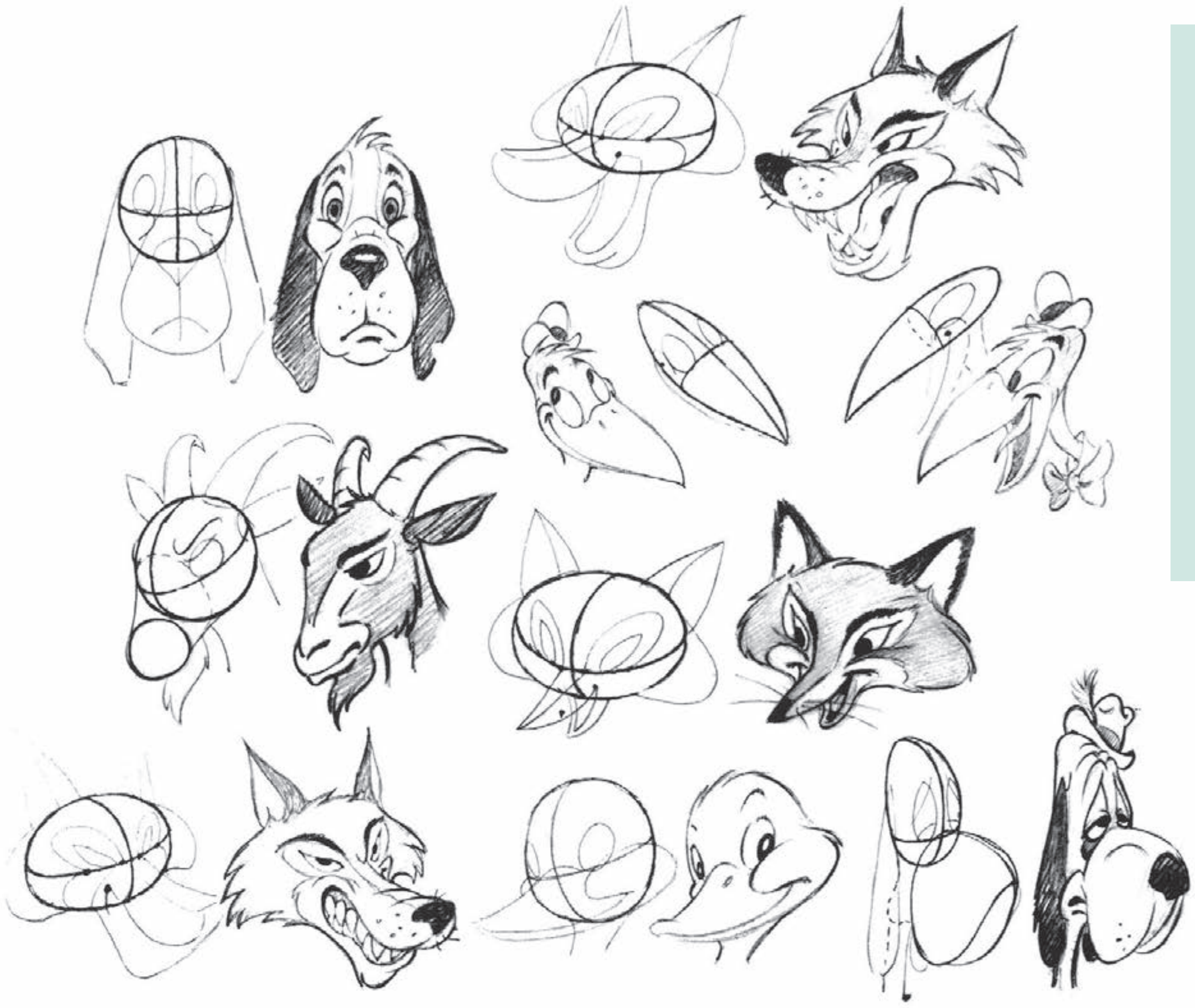
Step Two Add nose construction. Make sure it fits solidly.

Step Three Now draw ovals for the eyes.

Step Four Be aware of the perspective when constructing the remaining details.

Step Five Study this basic formula. Then draw the dog in different positions.



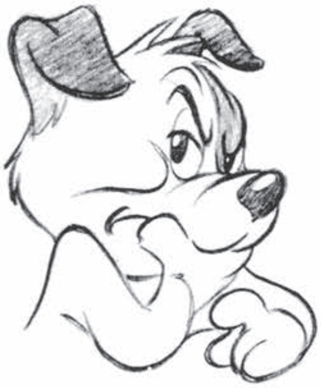


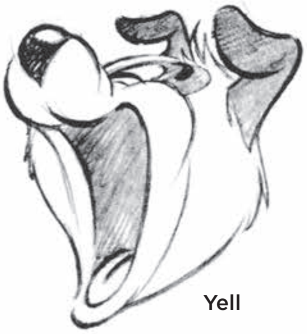
Using a Reference Drawing

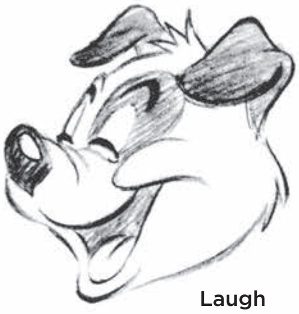
All animated cartoon characters can be reduced to a basic formula. This formula makes them easier to master and ensures uniformity throughout a film, even if several different artists work on the same character. Animators use reference drawings to know the proportion guidelines when drawing the character in different poses and actions.

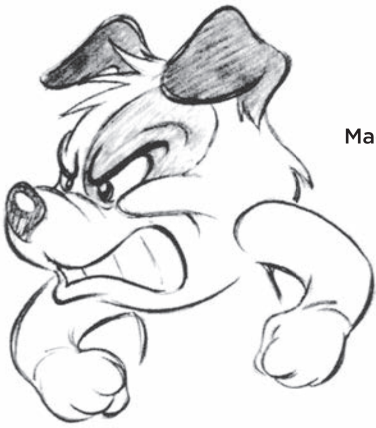
FACIAL EXPRESSIONS

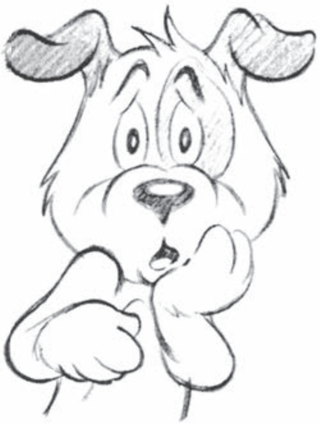
The job of an animator is the same as the job of an actor in live-action films. Both should be masters of portraying emotions. Study your own facial expressions in a mirror; then pick a character you know and draw your expressions on that character, as I have here with this little puppy.

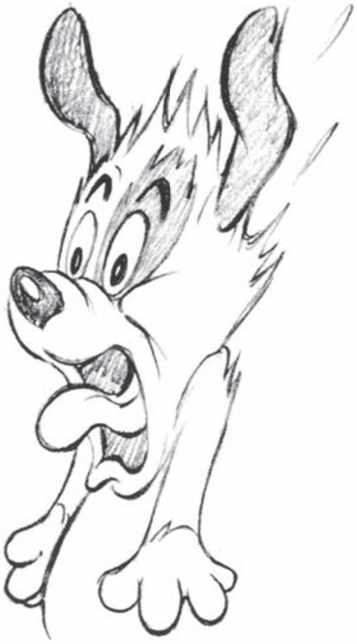

Skeptical

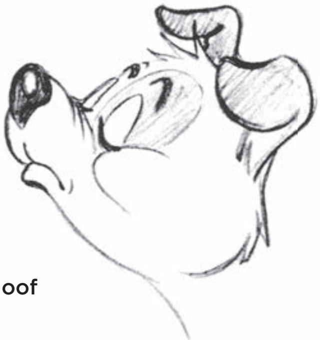

Yell

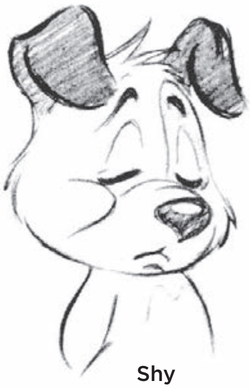

Laugh

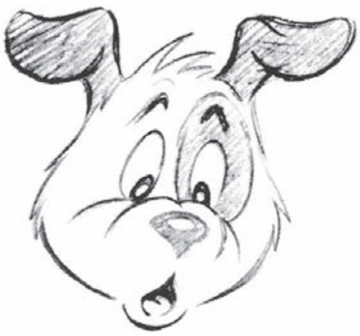

Mad

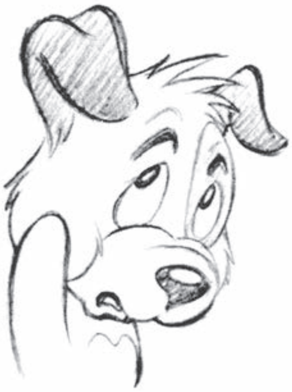

Tragic thought


Fright

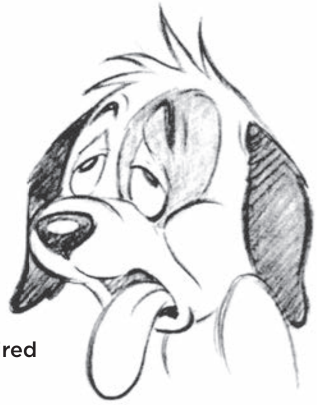

Aloof


Shy

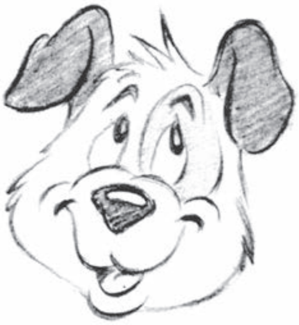

Surprise



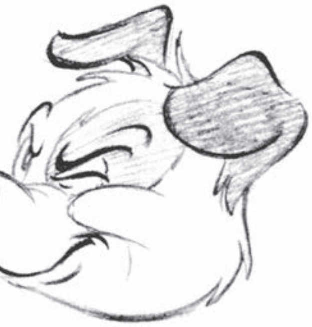
Ashamed



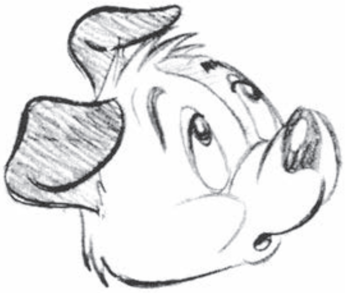
Tired



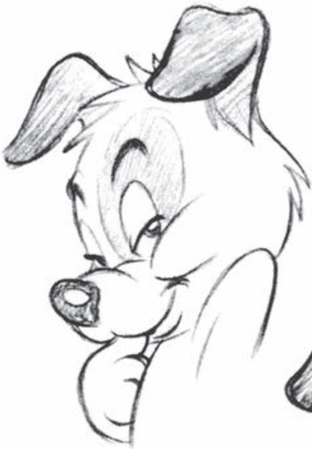
Smile



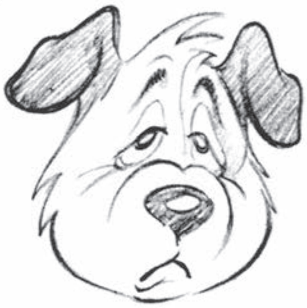
Wink



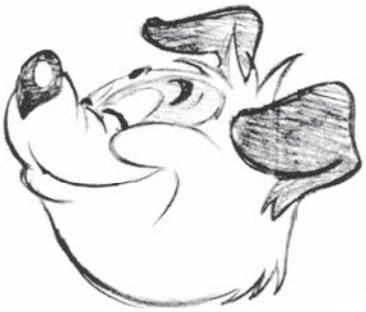
Awe



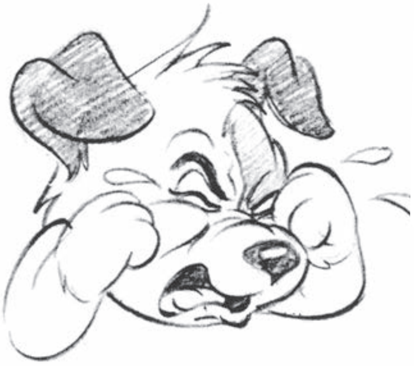
Coy



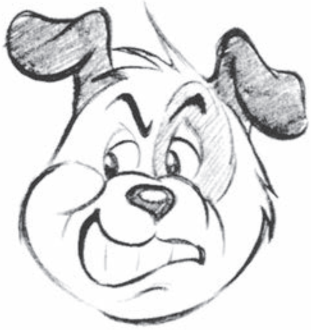
Sad



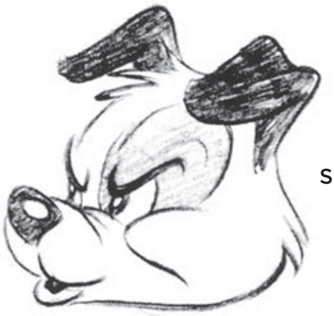
Smile



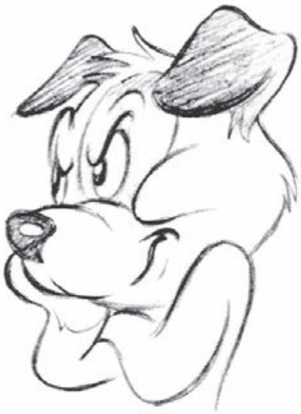
Crying



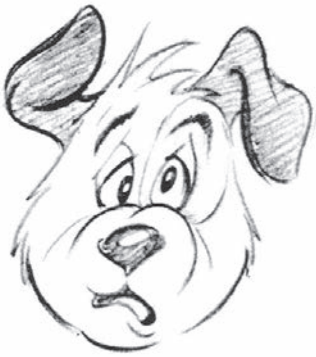
Sneer



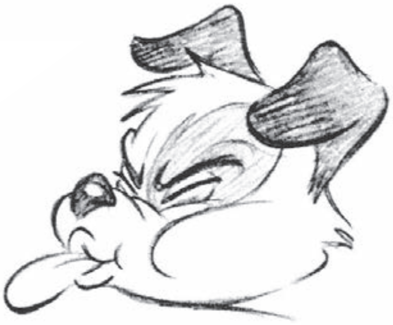
Severe



Impatient



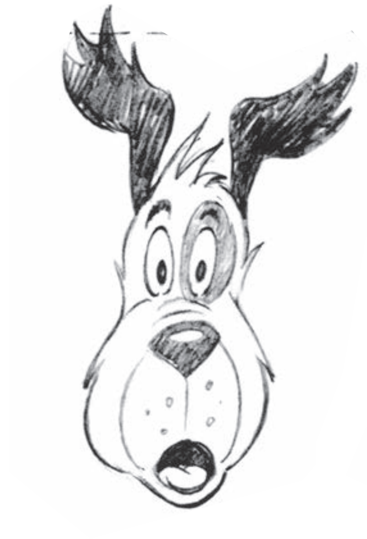
Knocked-out

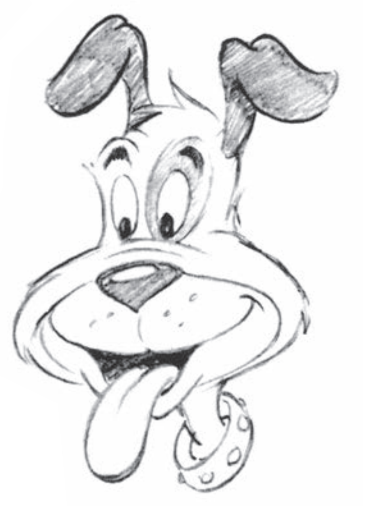


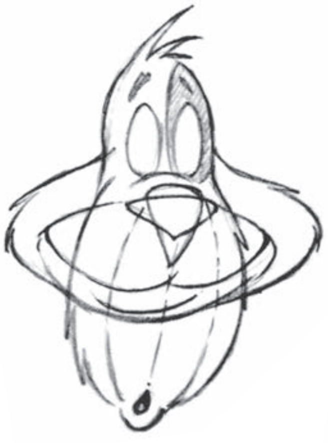
Contempt

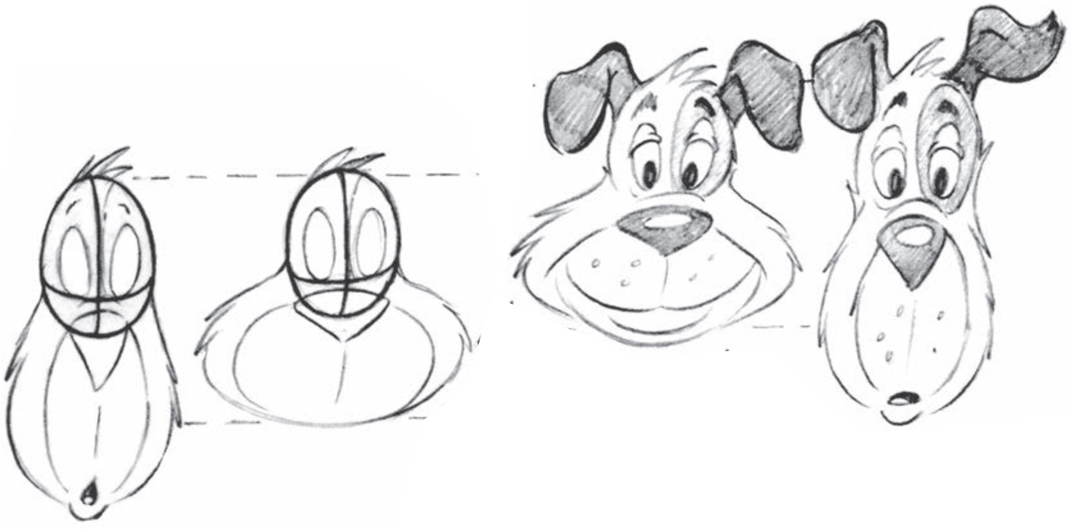
Stretching & Squashing Heads

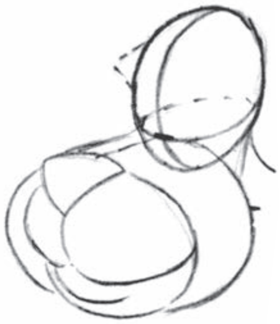
A cartoon head can be stretched or squashed to strengthen an expression. The oval containing the eyes does not change much, but the eyes reflect the expression of each stretch and squash. On the other hand, the mouth area varies greatly. Small details react along with the larger form in which they are contained.

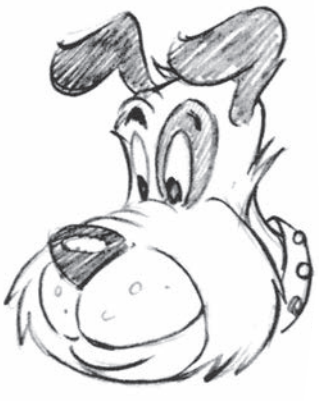


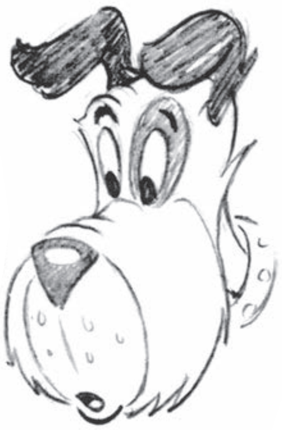


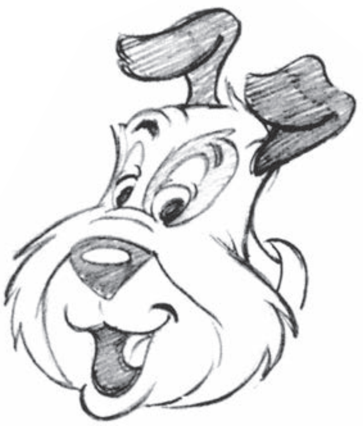




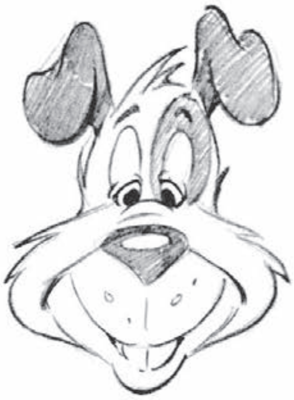


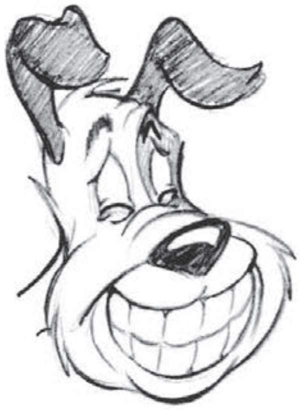


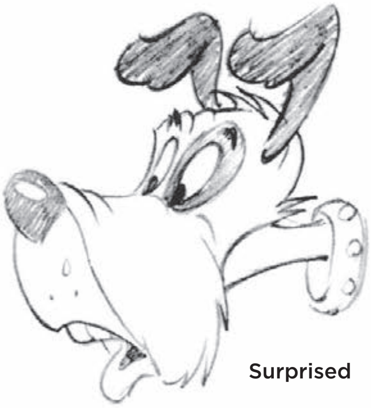


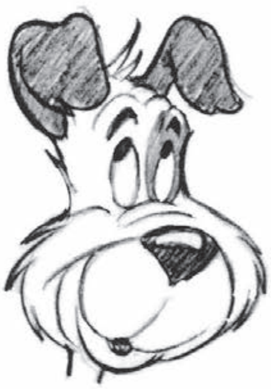


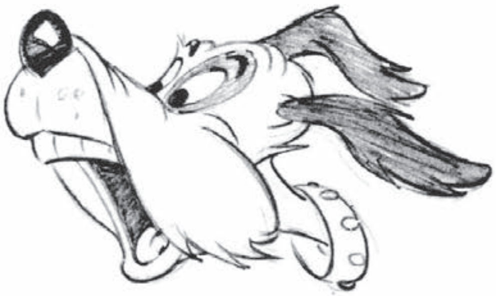
The wide variety of expressions shown here is the result of stretching and squashing selected areas of the face.

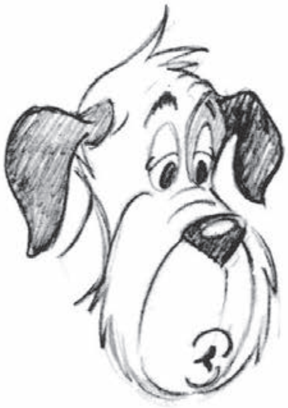

Lighthearted

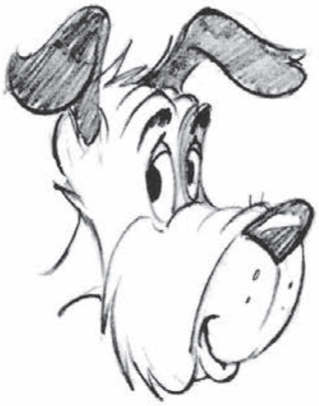

Pleased

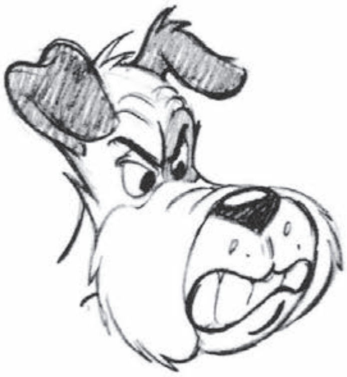

Surprised

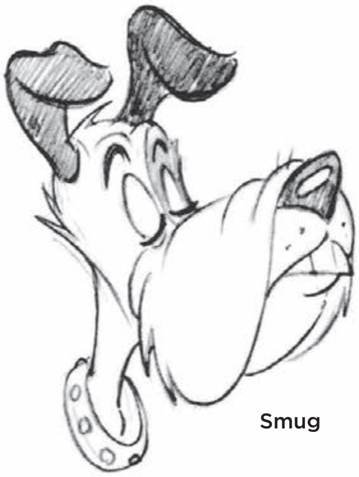

Contemplative


Shocked


Puzzled

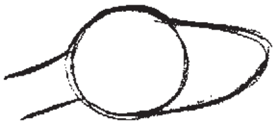

Begging


Angry

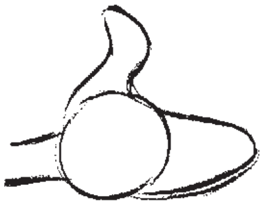

Smug

THE HANDS

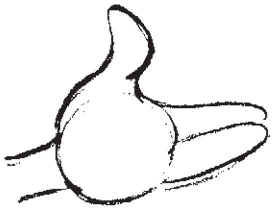
Cartoon hands can be tricky to draw. Study the hands on this page and draw your own hands (simplified) from a mirror. This way they appear as they do in a drawing.



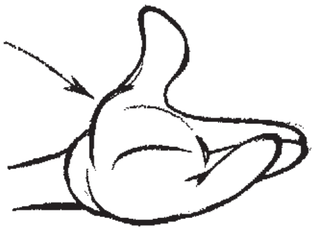
Step One Begin drawing the hand with several simple shapes.



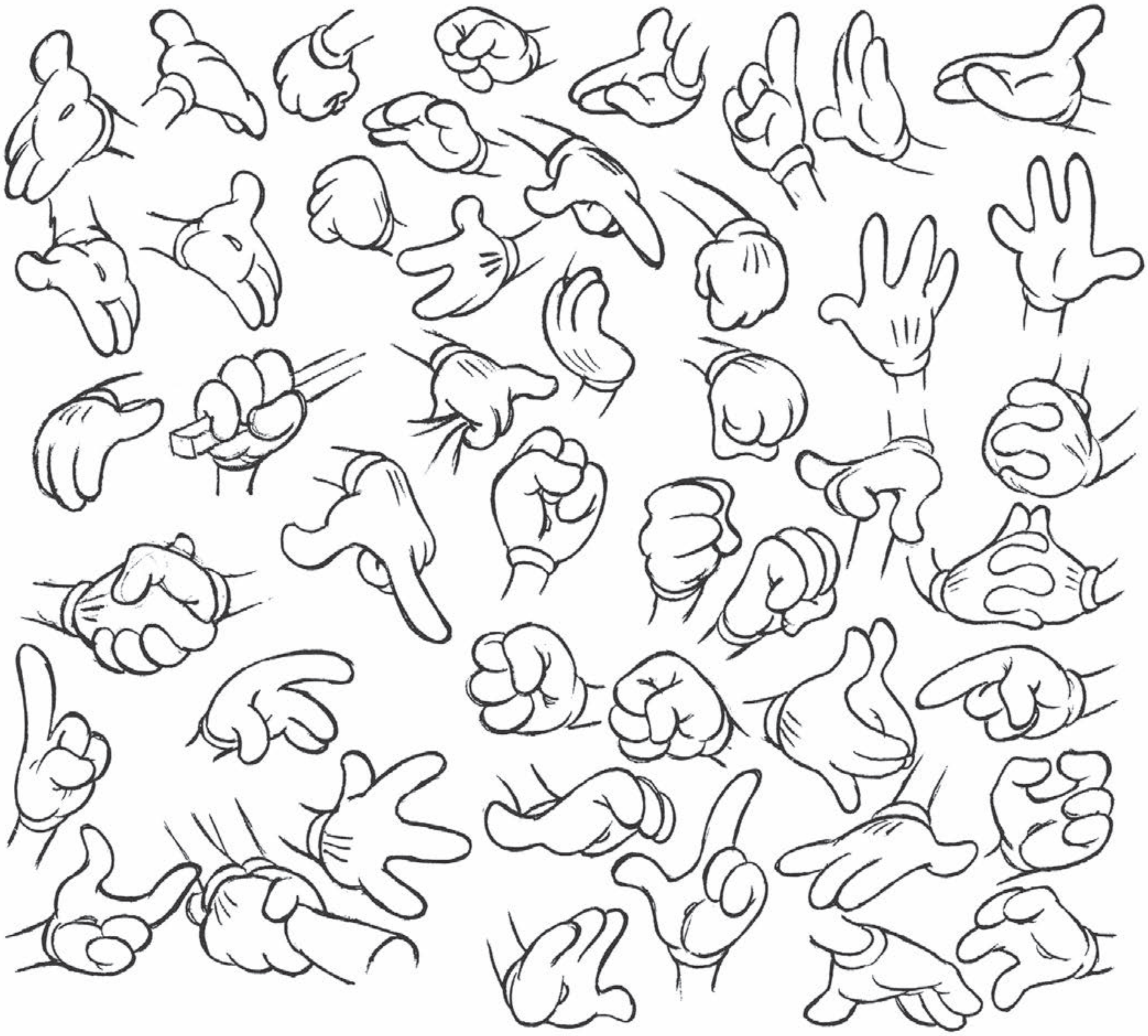
Step Two After adding the thumb, the hand will resemble a mitten.



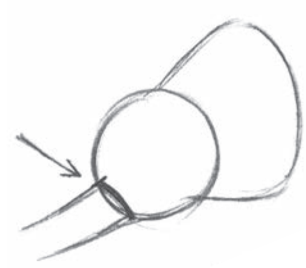
Step Three Add the two middle fingers.



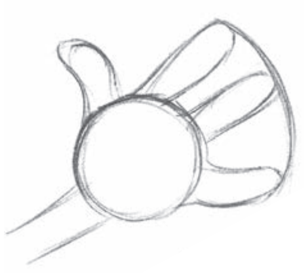
Step Four Put in the little finger, varying its position to prevent monotony, and exaggerate the base of the thumb.



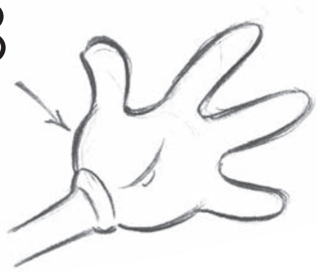
1



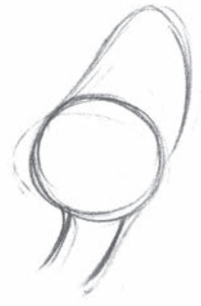
2



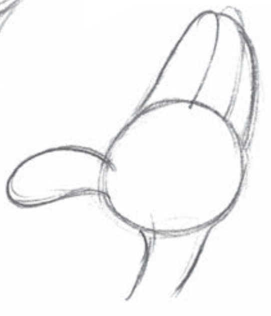
3



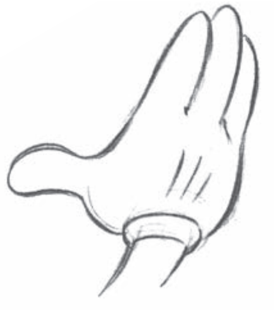
1



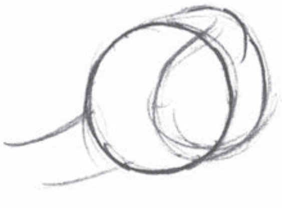
2



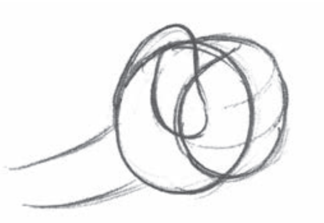
3



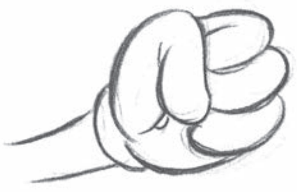
1

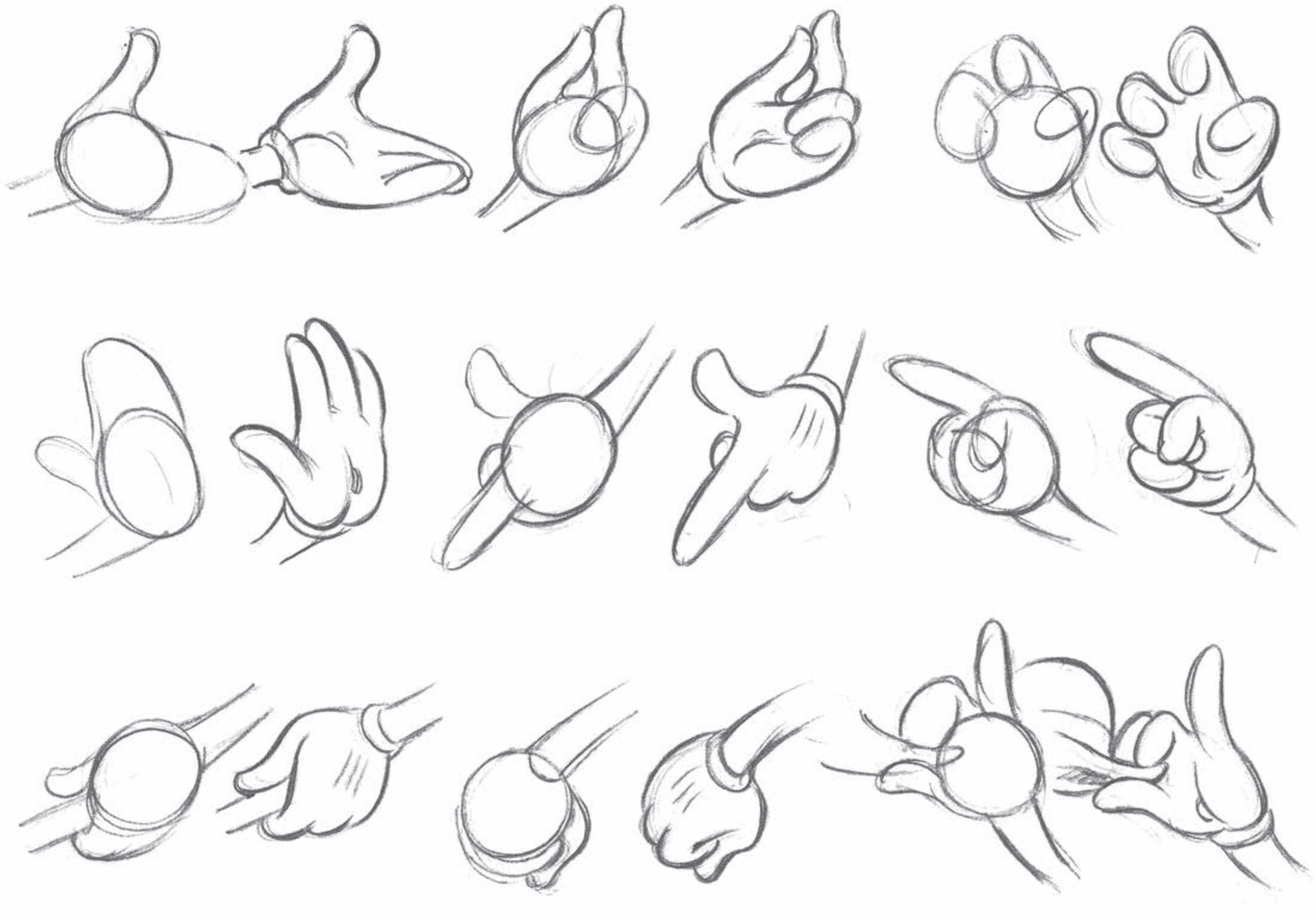


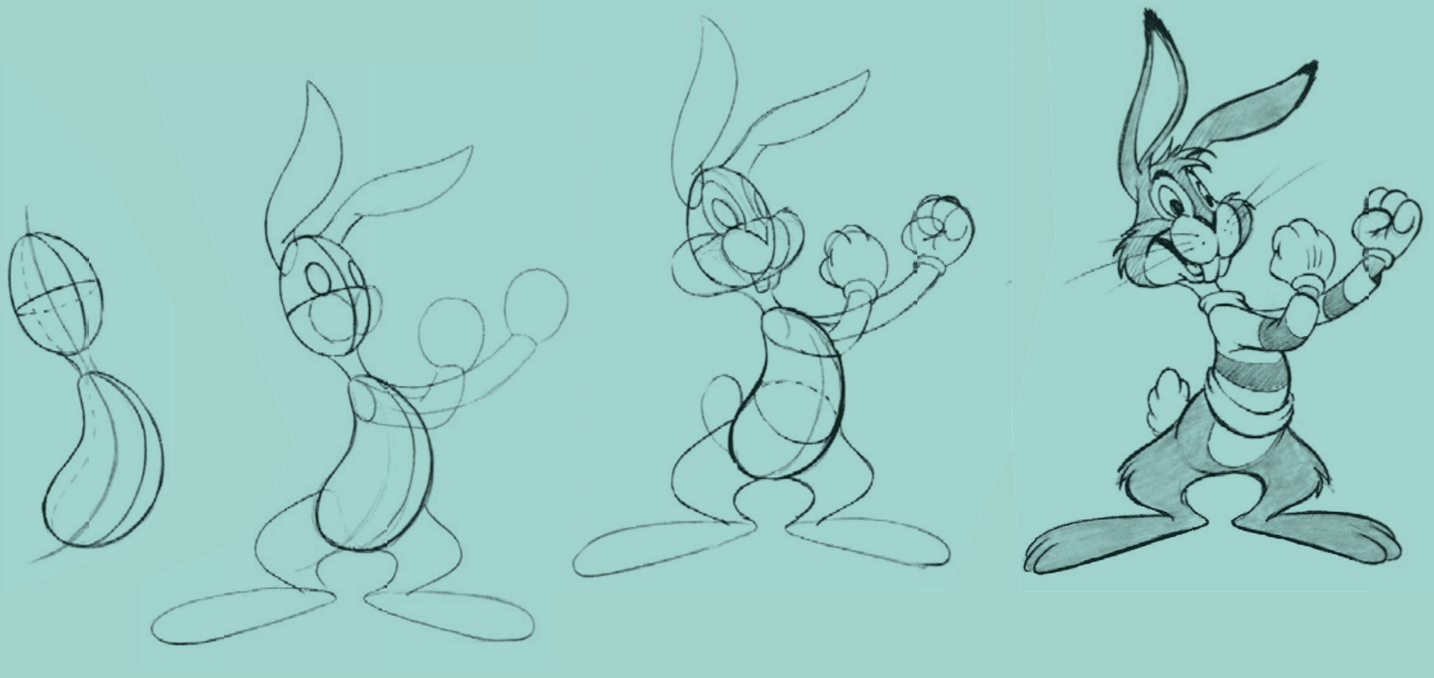
2

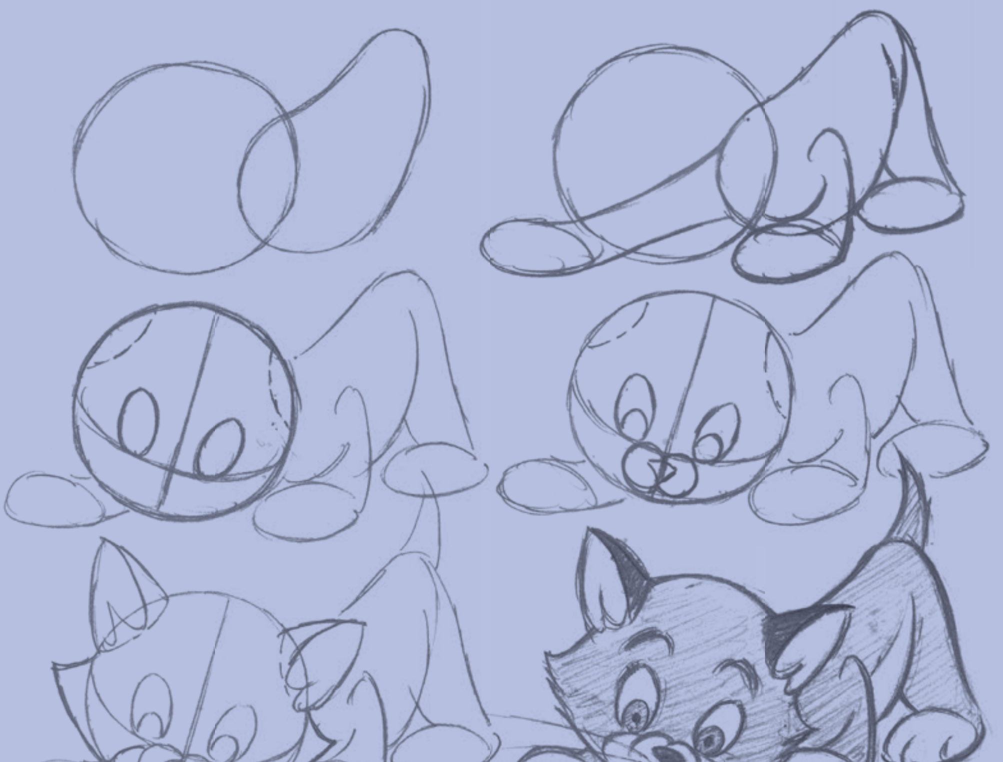


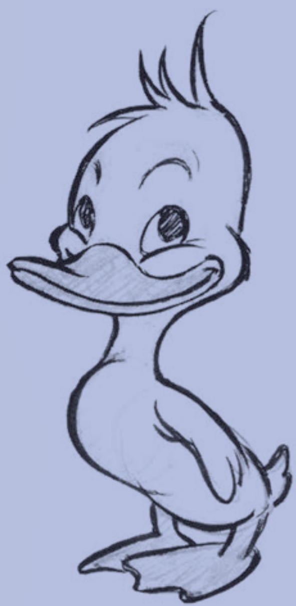
3



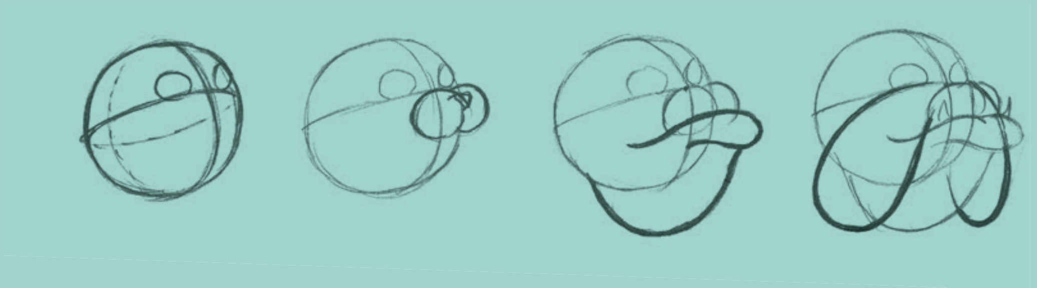




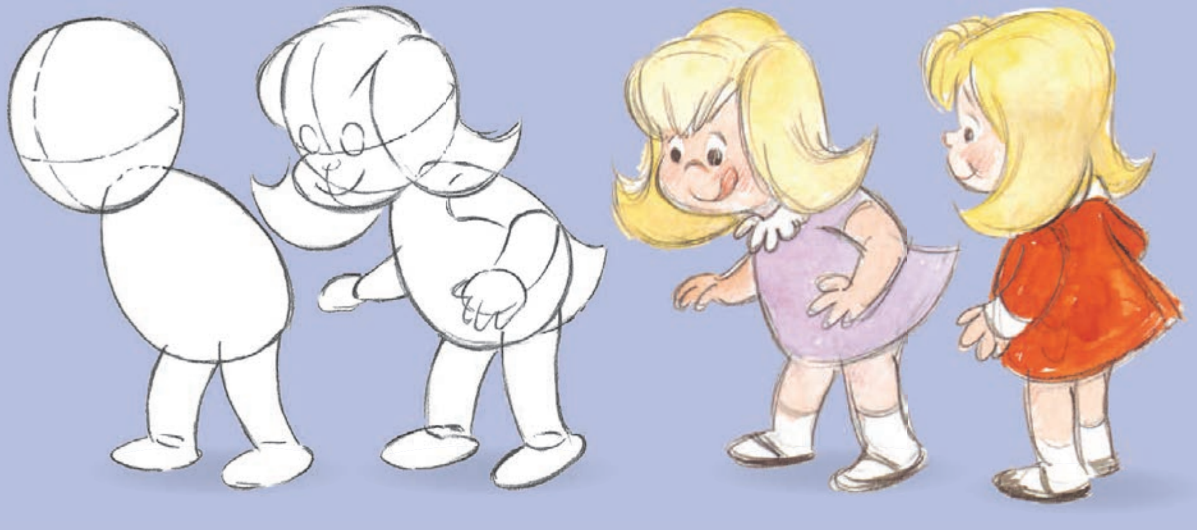




CHAPTER 3



CHARACTER DESIGN & DEVELOPMENT

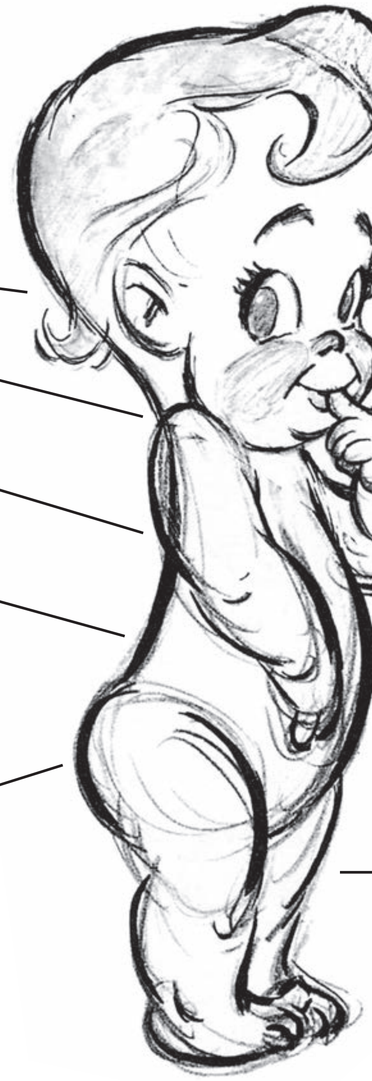


CARTOON EXAMPLES

Developing a character is not merely a matter of drawing the figure; each character also has its own shape, personality, features, and mannerisms. The animator has to take these qualities into consideration to make the characters seem lifelike and believable. Think about the type of character you wish to design; then use the diagrams and guides shown in this chapter to begin your drawing.

THE CUTE CHARACTER

The first type of character we'll look at is the cute character. "Cuteness" is based on the basic proportions of a baby and the expressions of shyness or coyness.



The head, with a high forehead, is large in relation to the body.

The ears are small in relation to adult size.

The eyes are placed low on the head and are usually large and wide-set.

No neck; the head attaches directly to the body.

The nose and mouth are small.

The body is pear-shaped and elongated.

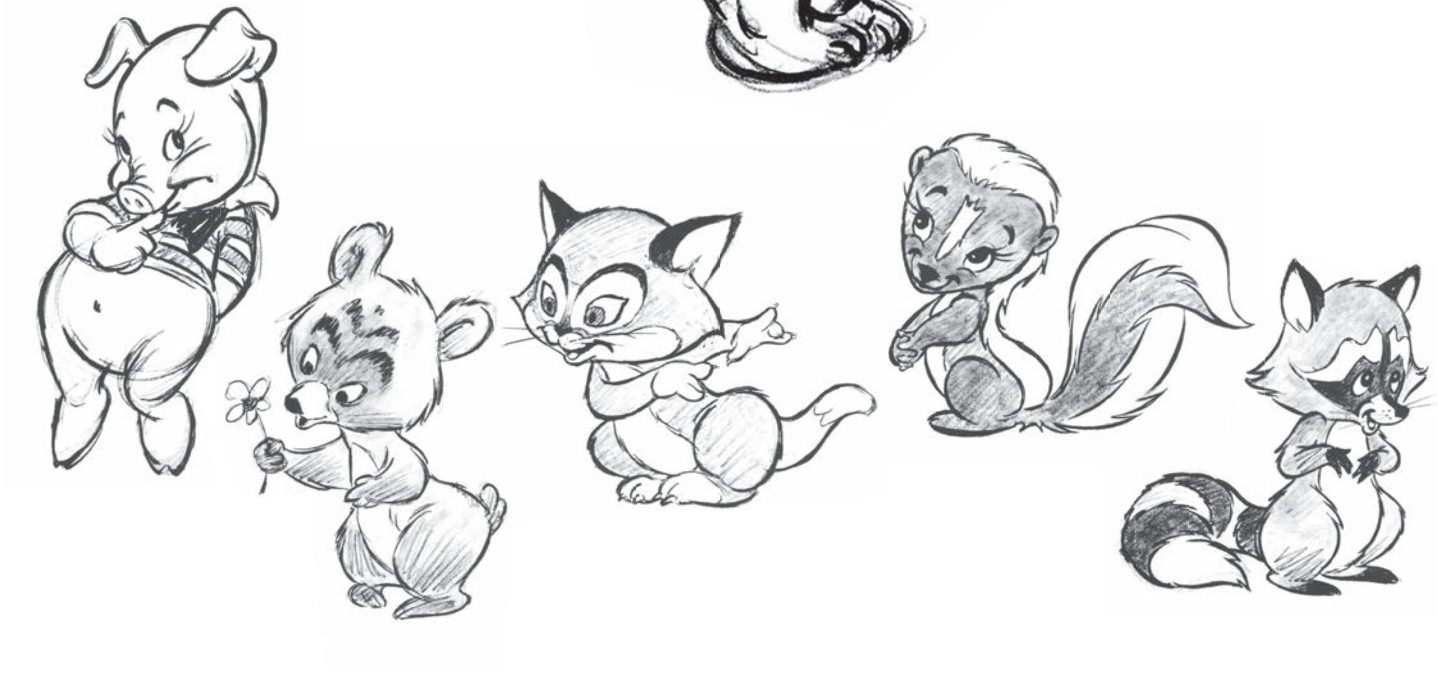
Short—never skinny—arms taper down to the hand and tiny fingers.

The back is swayed; the line continues up the back of the head and down into the rear end.

The tummy bulges; the character should look well-fed.

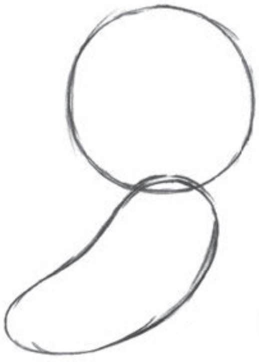
The rear end protrudes; it never bulges, but fits into the leg lines and the base of the body.

The legs are short and fat; legs taper down into small feet for the type.

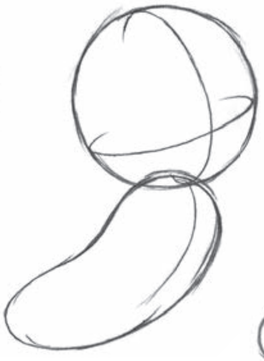


CUTE KITTEN

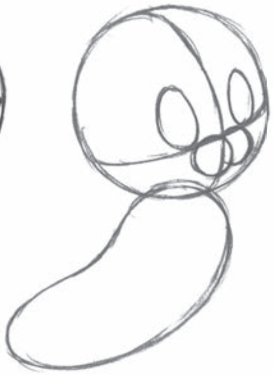
Below are the progressive steps that are taken by an animator to construct and draw a cartoon character. In the more complex pose, more steps are needed to complete the drawing. Note that the large paws on this kitten add to the cute look.



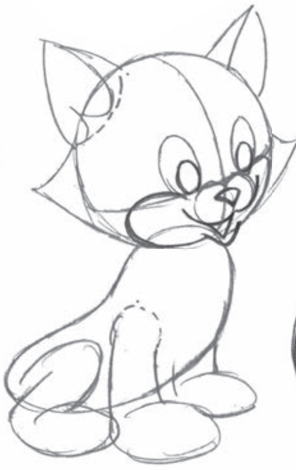
Step One Develop the kitten's body with a circle and an oval.



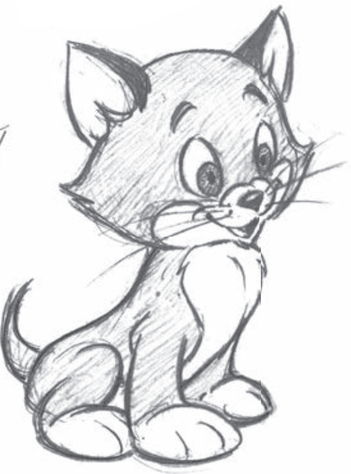
Step Two Add perspective guidelines.



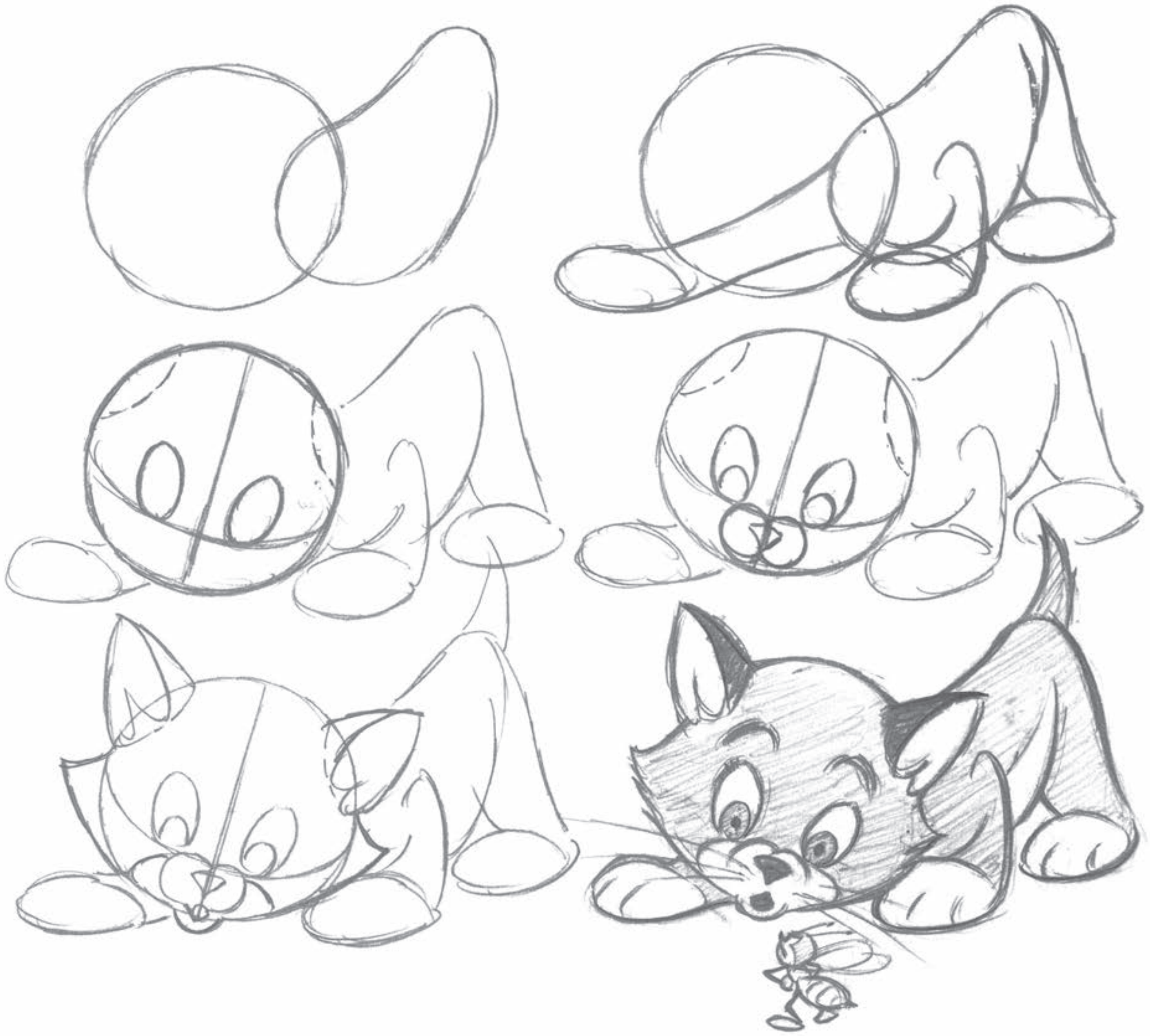
Step Three Place the eyes and the nose.



Step Four Build the ears and the legs.



Step Five Add the details to complete the kitten.



CUTE PUPPY

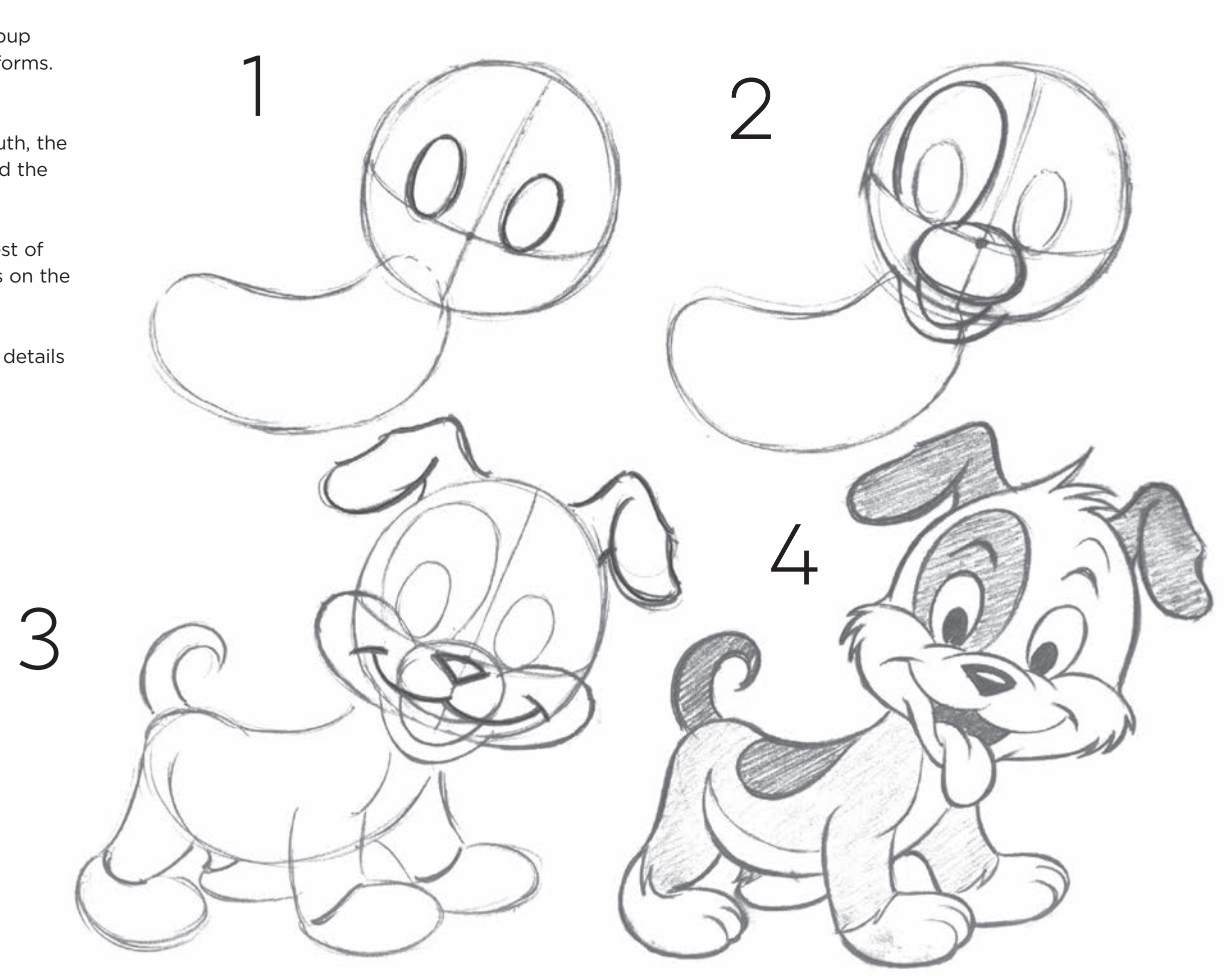
As with the kitten, begin drawing this pup with a basic construction of circles and ovals. Then draw perspective guidelines to place the features.

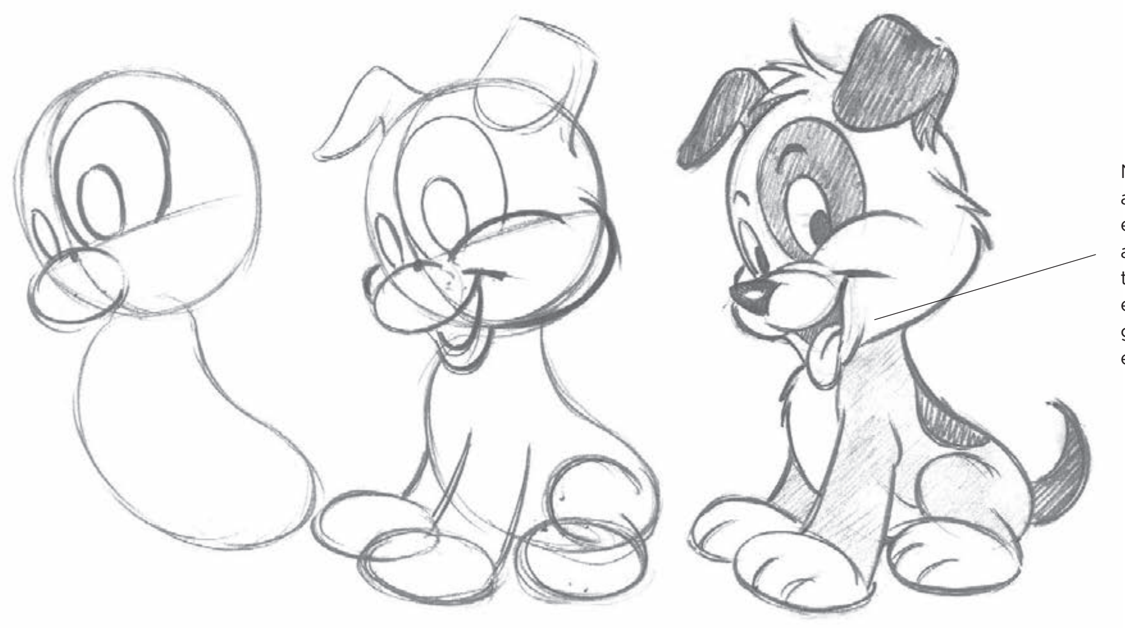
Step One Develop this pup with circles and rounded forms. Place the eyes.

Step Two Draw the mouth, the nose, and the circle around the right eye.

Step Three Place the rest of the shapes and the details on the basic forms.

Step Four Add shading details for accent.





Notice that the tongue accentuates the happy expression of the mouth, and the cheeks overlap the eyes, accenting the expression. A sideways glance like this is a "cute" expression.

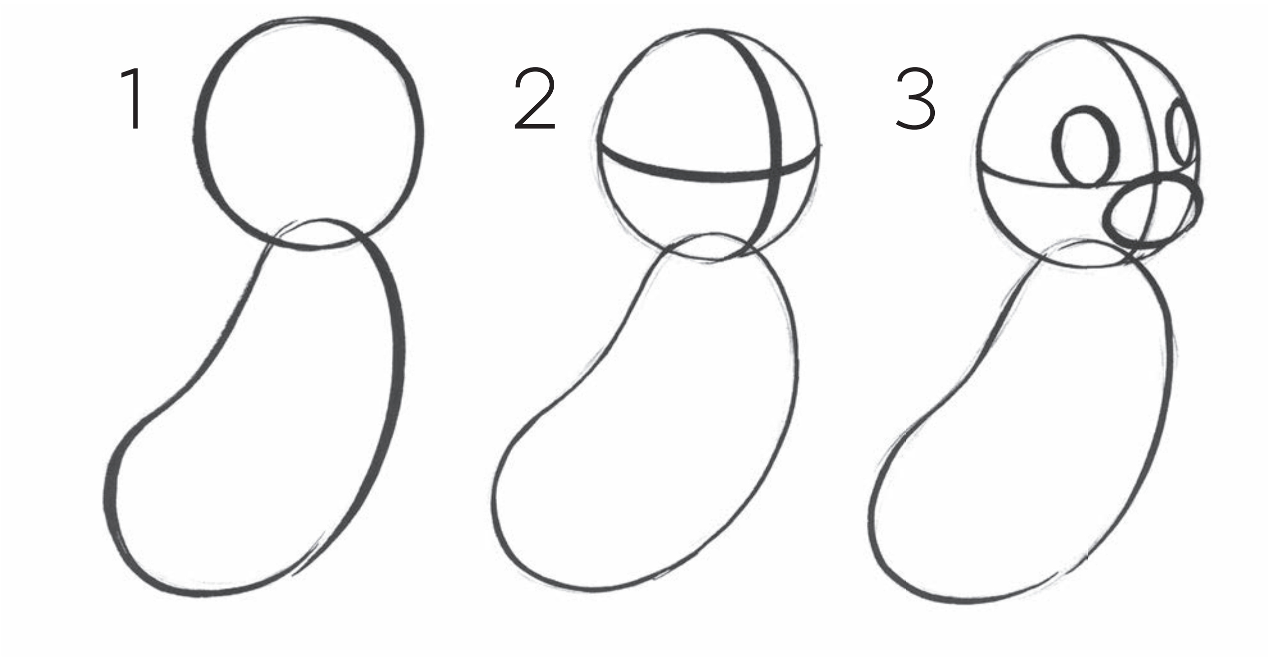
CUTE RABBIT

Animators usually draw with a mechanical pencil with a No. 2 lead. Then a kneaded eraser is lightly rubbed over the entire drawing to prepare for a "cleanup" or revision drawing.

Step One Draw a circle for the head and a pear shape for the body.

Step Two Add perspective guidelines around the head.

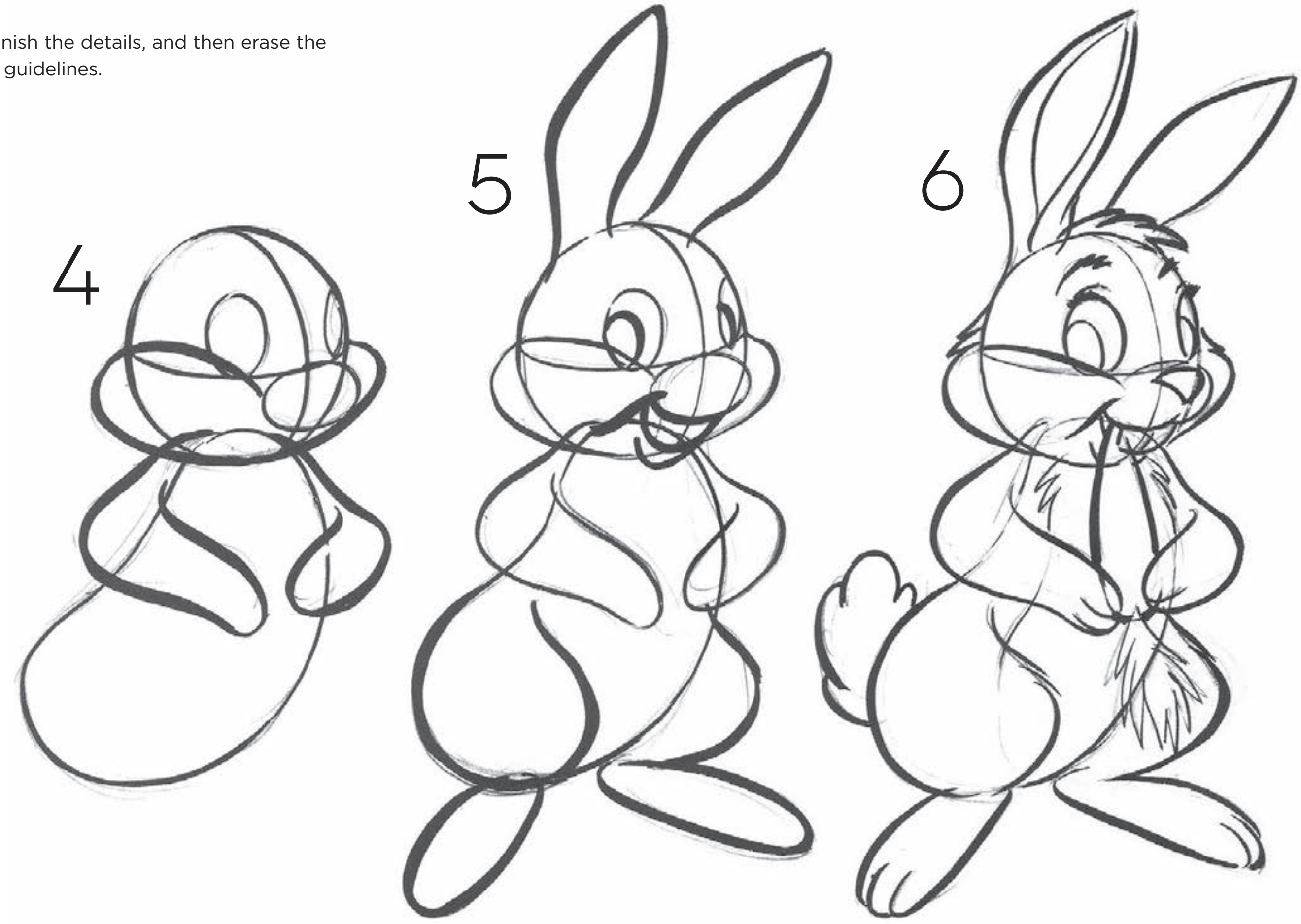
Step Three The eyes are placed above the horizontal guideline. The nose starts where the guidelines cross.



Step Four Add the cheeks and fit the arms on top of the body.

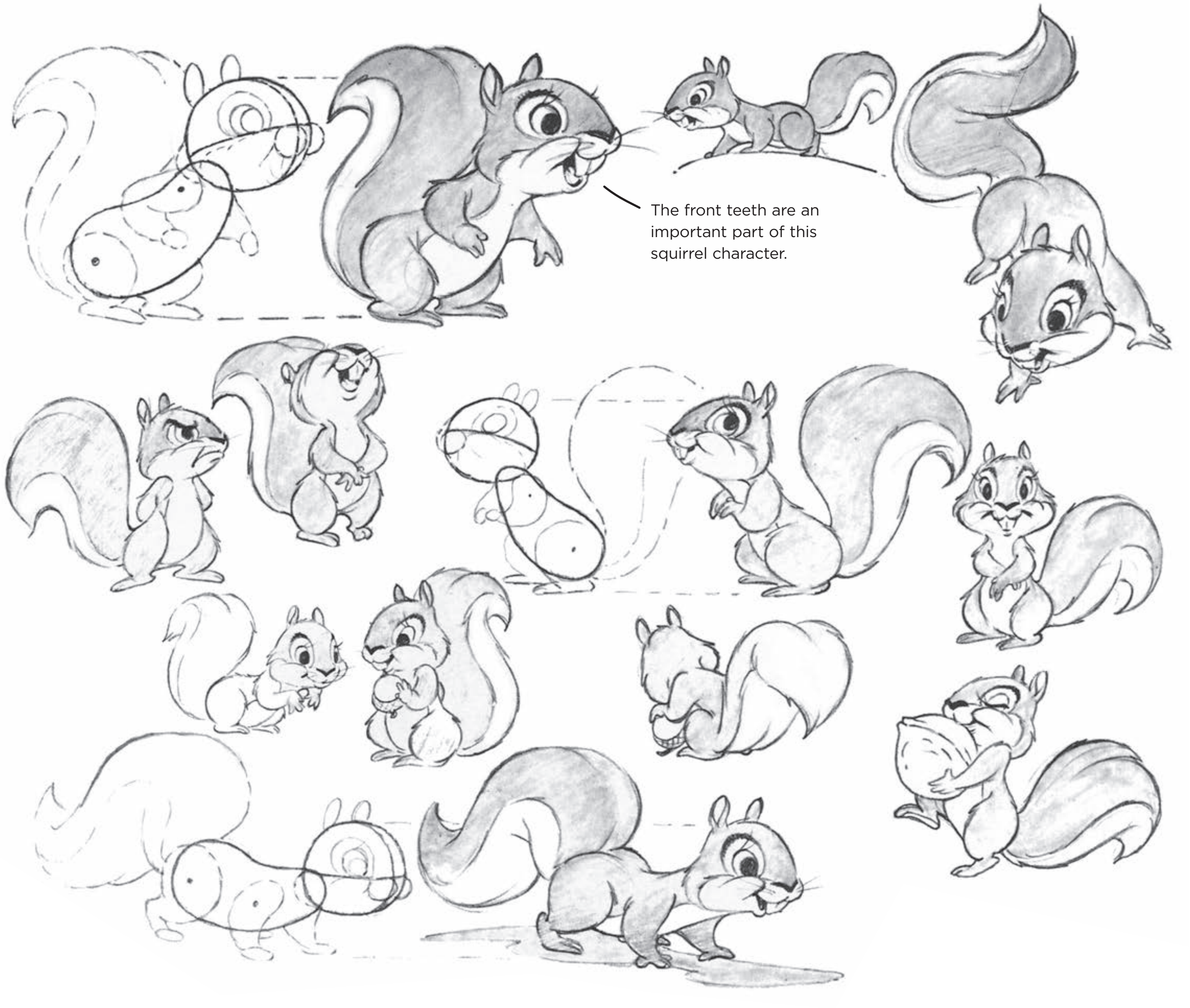
Step Five Draw the ears, eyes, mouth, and legs.

Step Six Finish the details, and then erase the construction guidelines.

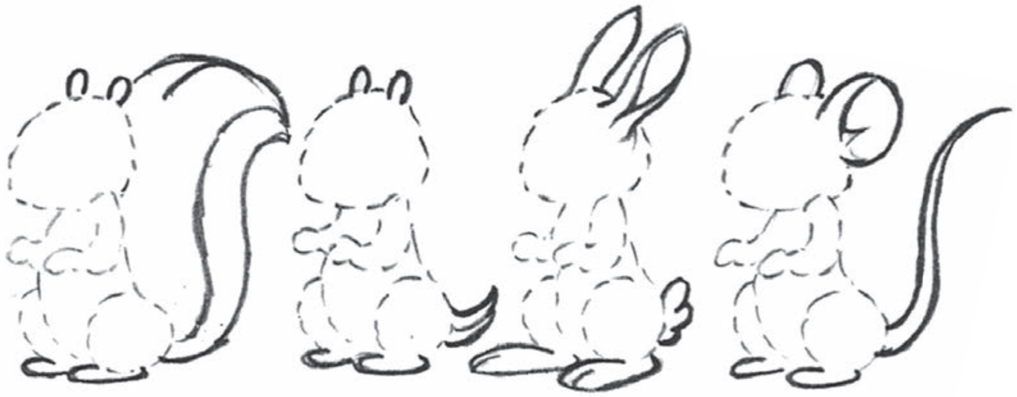


OTHER CUTE CHARACTERS

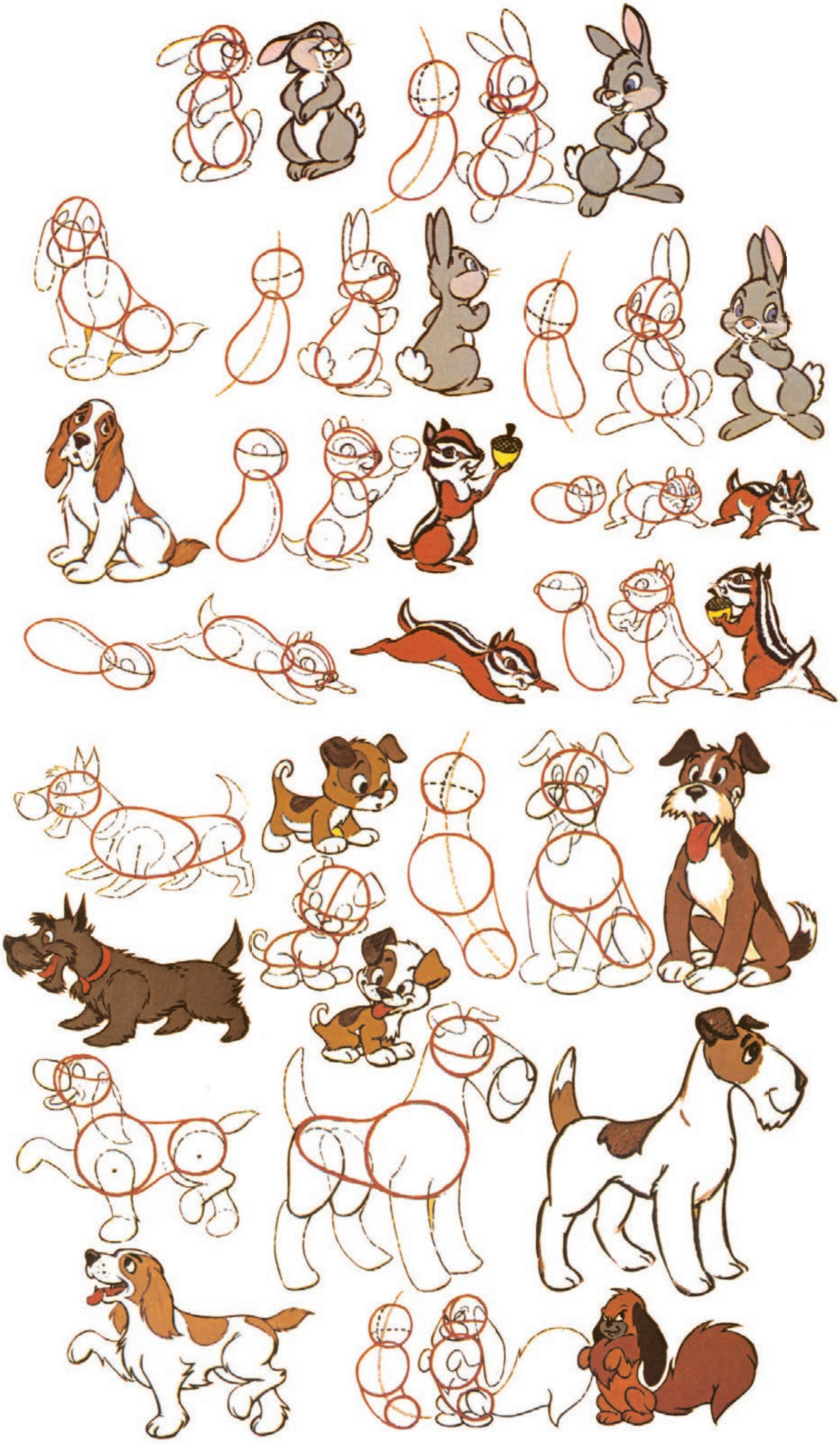
Here are action ideas for drawing a squirrel, which is developed using rounded and circular forms. Like other cute characters, the head is large in relation to the body.



The front teeth are an important part of this squirrel character.

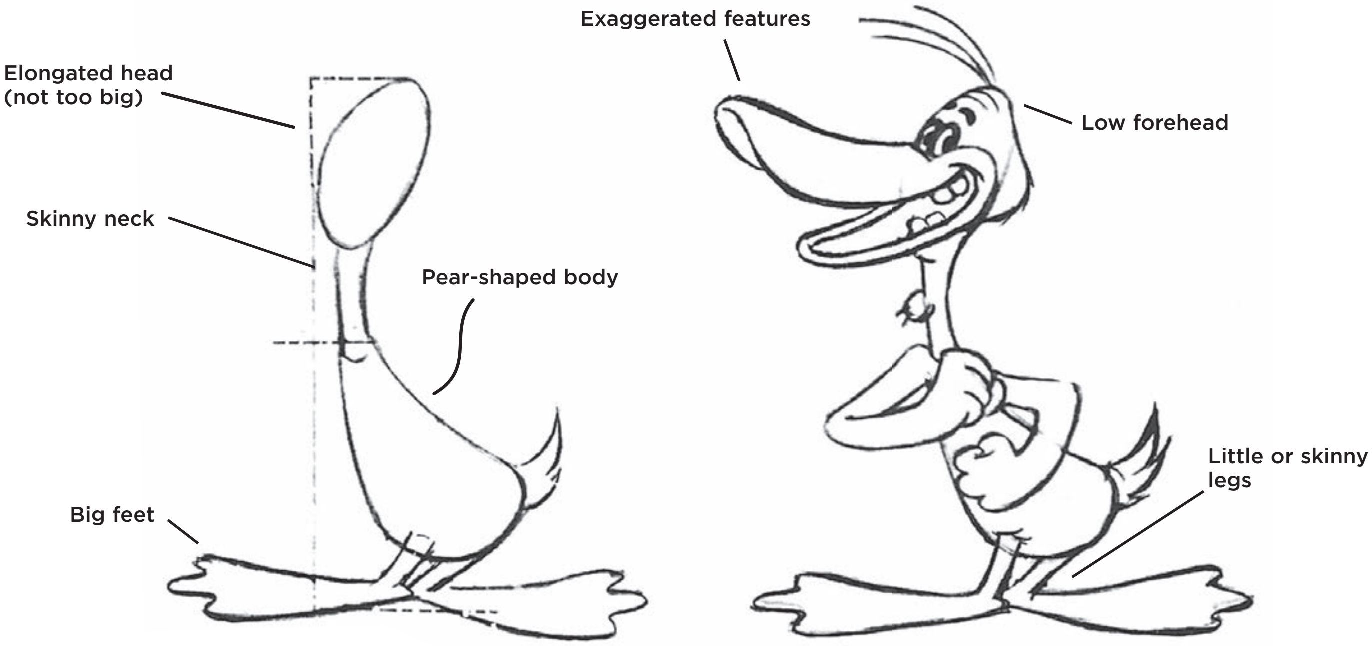


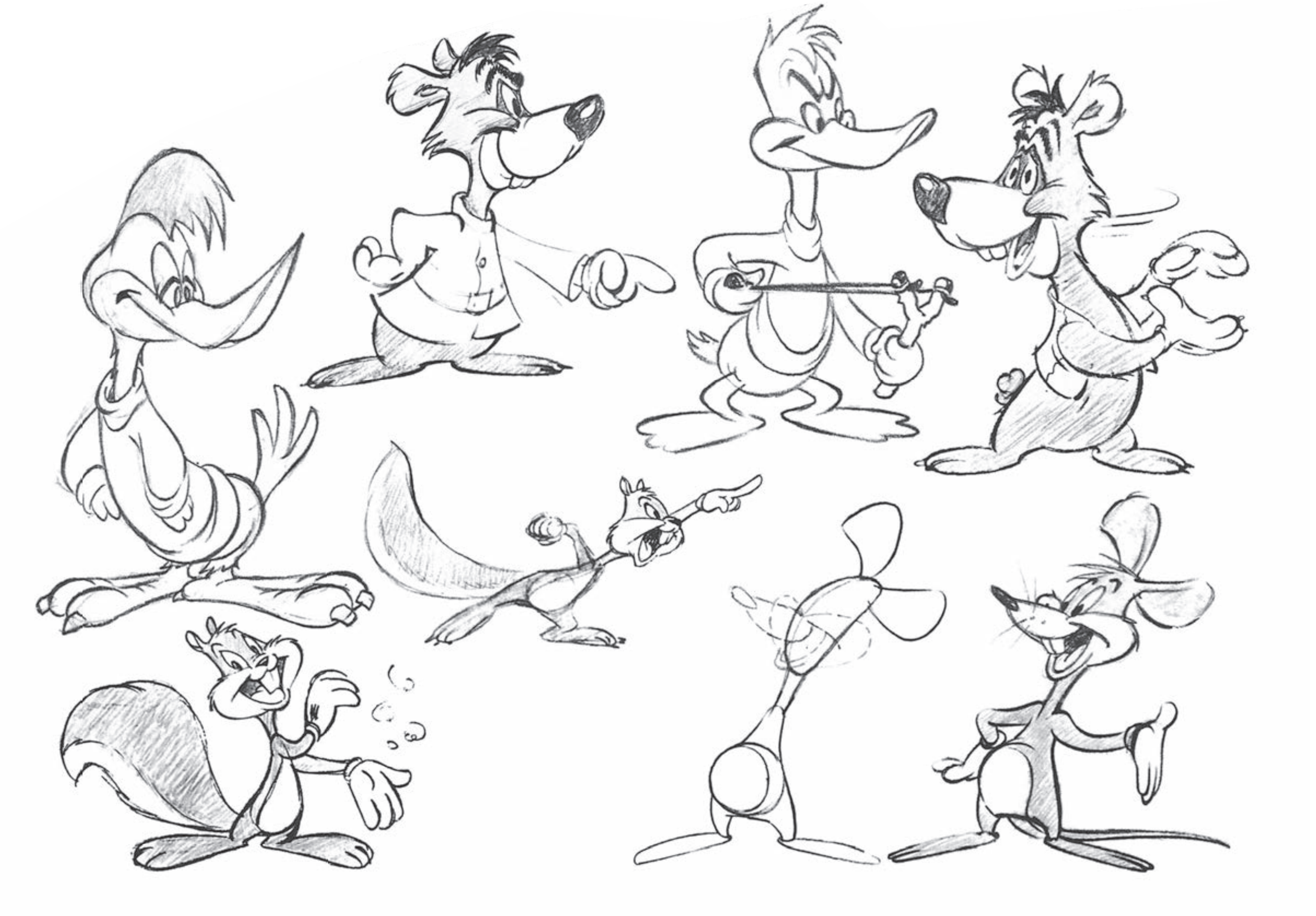
This squirrel formula can be changed to a chipmunk, a rabbit, or a mouse by simply changing the tails, ears, and feet.



THE SCREWBALL TYPE

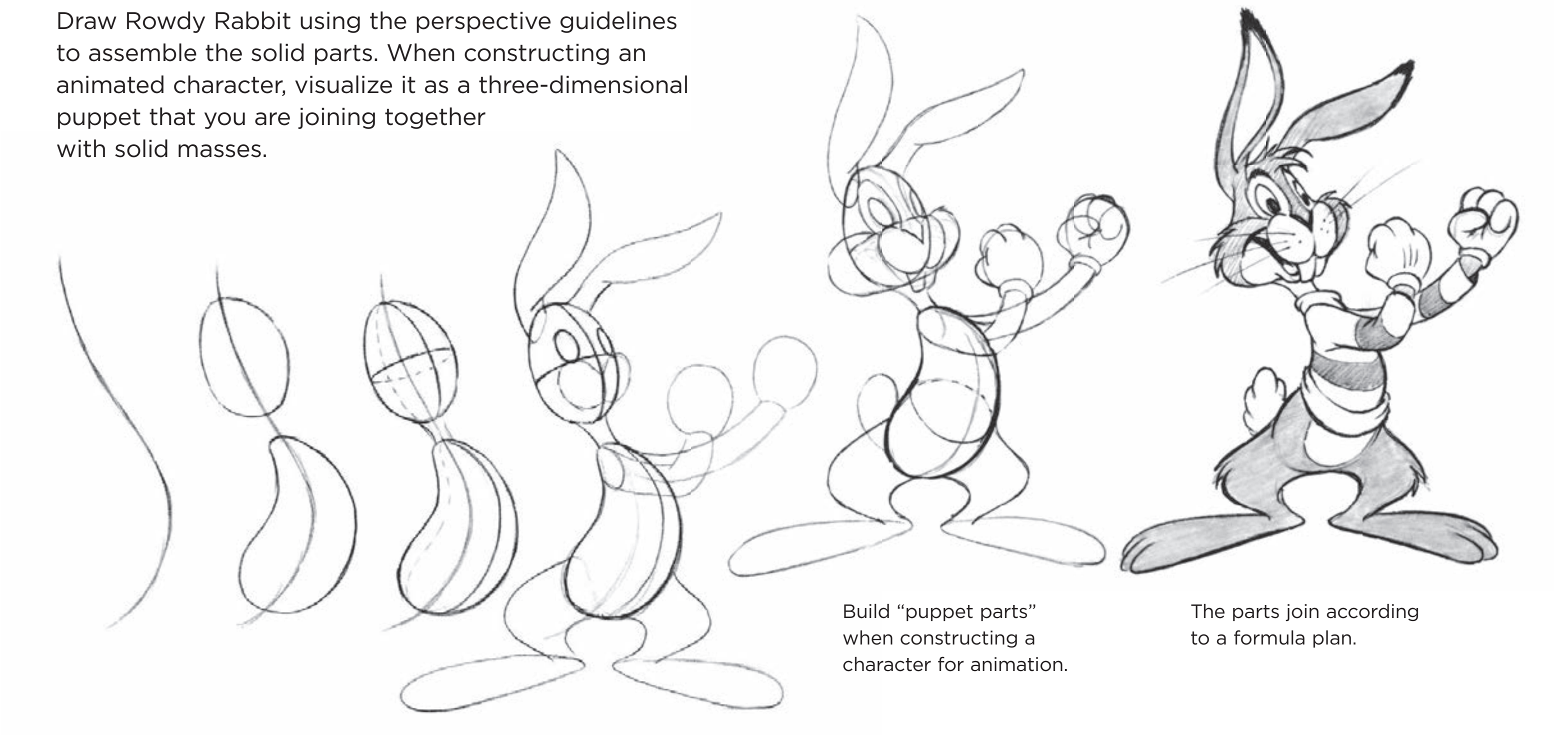
This formula gives you some features that cocky wise guys have in common.


Elongated head (not too big)
Skinny neck
Pear-shaped body
Big feet
Exaggerated features
Low forehead
Little or skinny legs



ROWDY RABBIT

Draw Rowdy Rabbit using the perspective guidelines to assemble the solid parts. When constructing an animated character, visualize it as a three-dimensional puppet that you are joining together with solid masses.

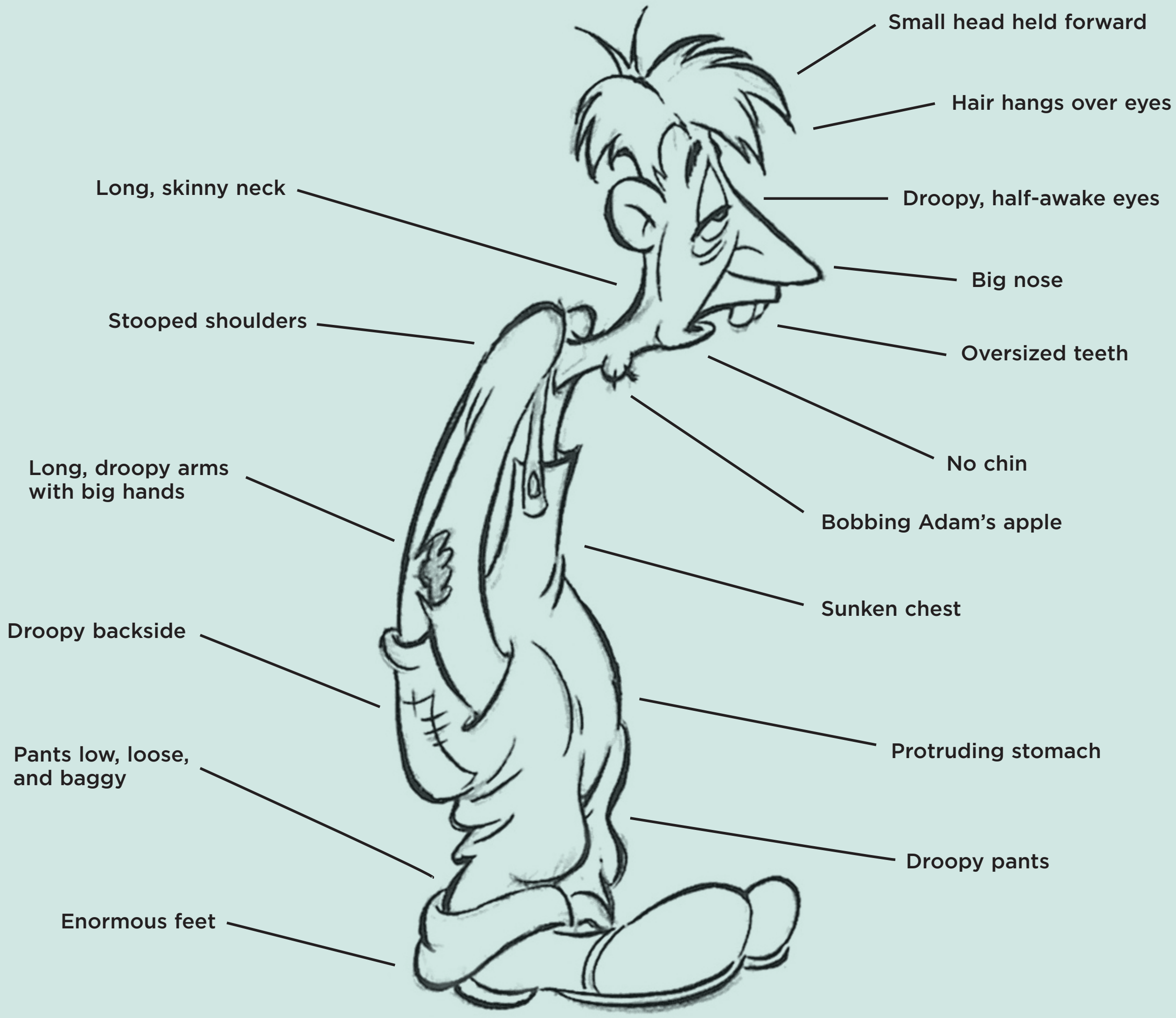


Build “puppet parts” when constructing a character for animation.

The parts join according to a formula plan.

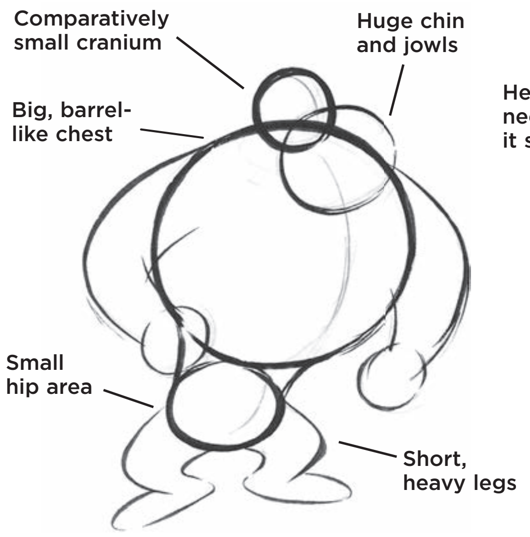
Each part has a definite place according to the formula.

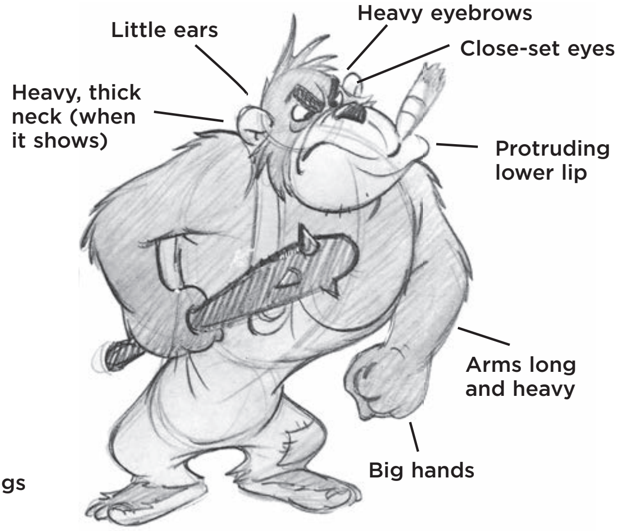
Drawing a “Goofy” Character

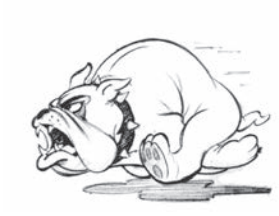

Small head held forward
Hair hangs over eyes
Long, skinny neck
Droopy, half-awake eyes
Big nose
Stooped shoulders
Oversized teeth
No chin
Long, droopy arms with big hands
Bobbing Adam’s apple
Sunken chest
Droopy backside
Protruding stomach
Pants low, loose, and baggy
Droopy pants
Enormous feet

THE "PUGNACIOUS" CHARACTER

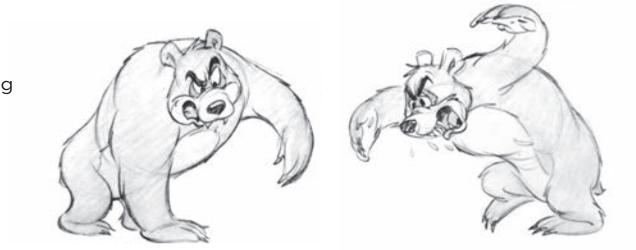
The character construction formulas help you draw the characters in any position and animate the character. Notice how it can also apply to four-legged types, as shown with the bear and bulldog below.


Comparatively small cranium
Huge chin and jowls
Big, barrel-like chest
Small hip area
Short, heavy legs

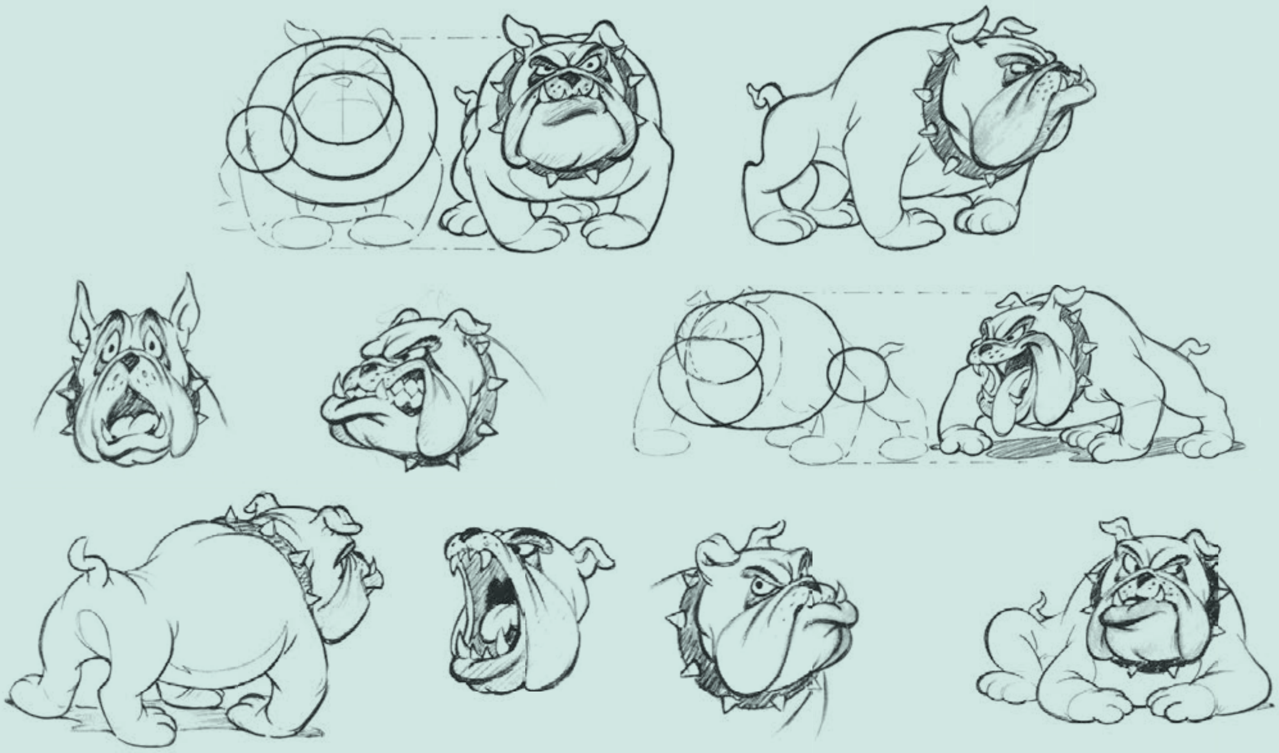

Little ears
Heavy eyebrows
Close-set eyes
Heavy, thick neck (when it shows)
Protruding lower lip
Arms long and heavy
Big hands



Make a repeat cycle of the bulldog running using this drawing for position one. See "Gallop" in "Movements of the four-legged figure" on page 76 for a guide.



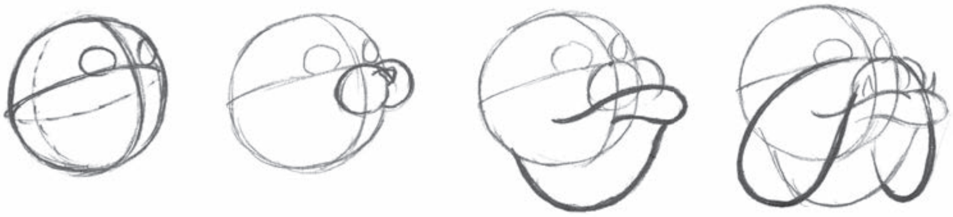
Creating Bulldog Expressions & Poses

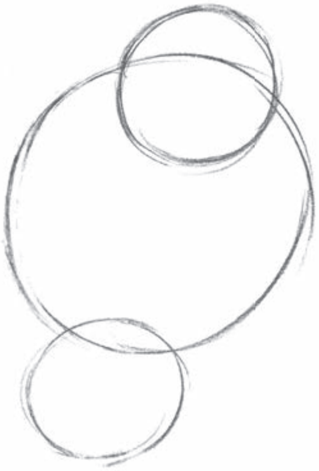


BULLDOG SAILOR

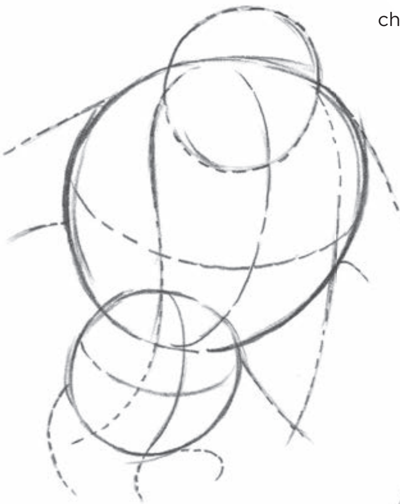
When creating this bulldog or any other character, you can erase guidelines as you go or use an animation board to make a "cleanup drawing" by placing a clean piece of paper over the almost-completed drawing (step 7 here) and tracing. Then add the details to the traced drawing.

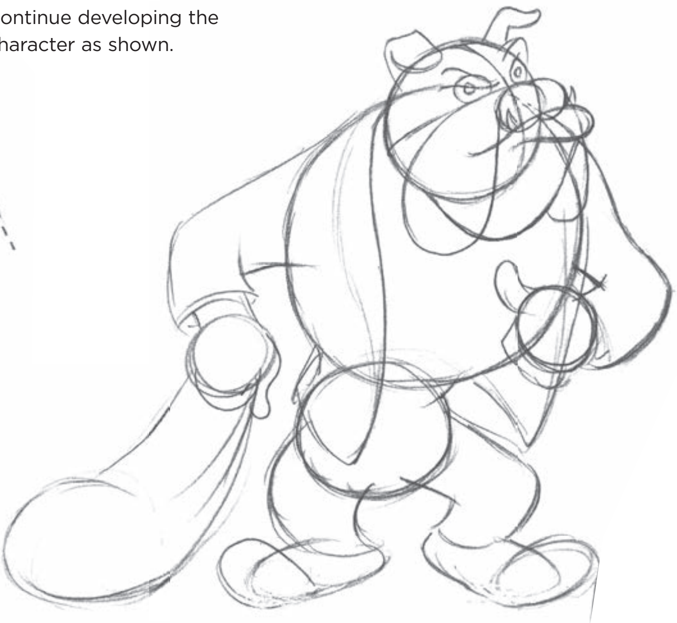
Build the head step by step.



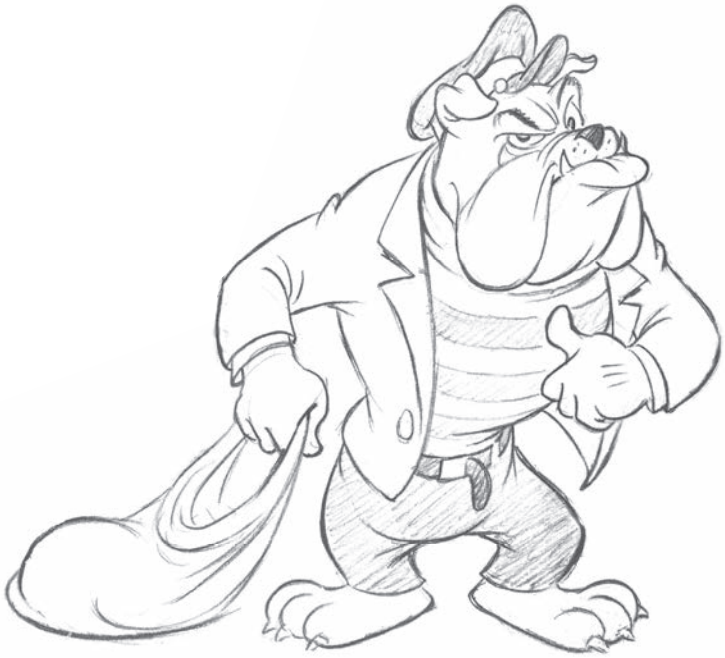


Continue developing the character as shown.





Fit the clothing to the body by using perspective guidelines.

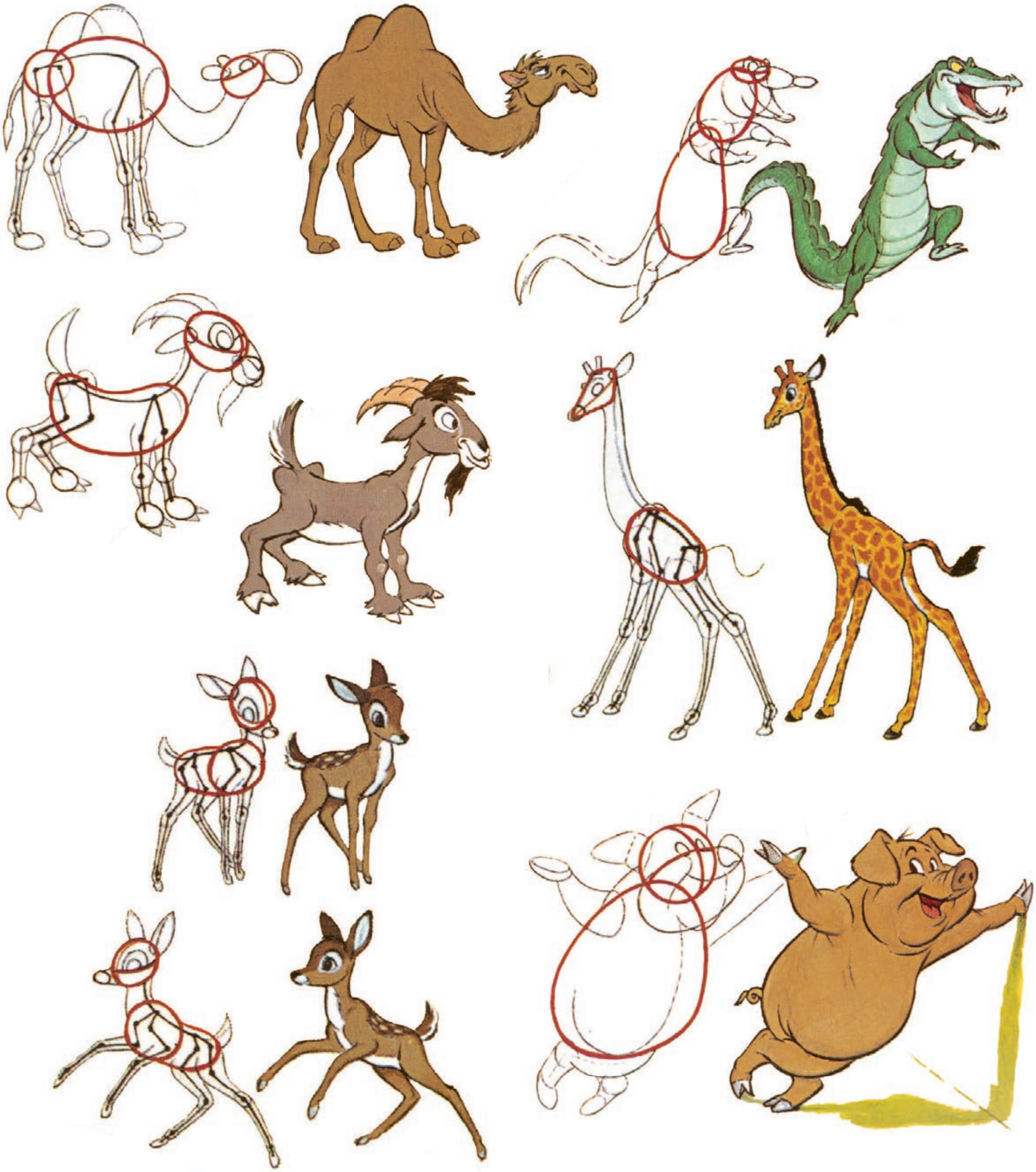


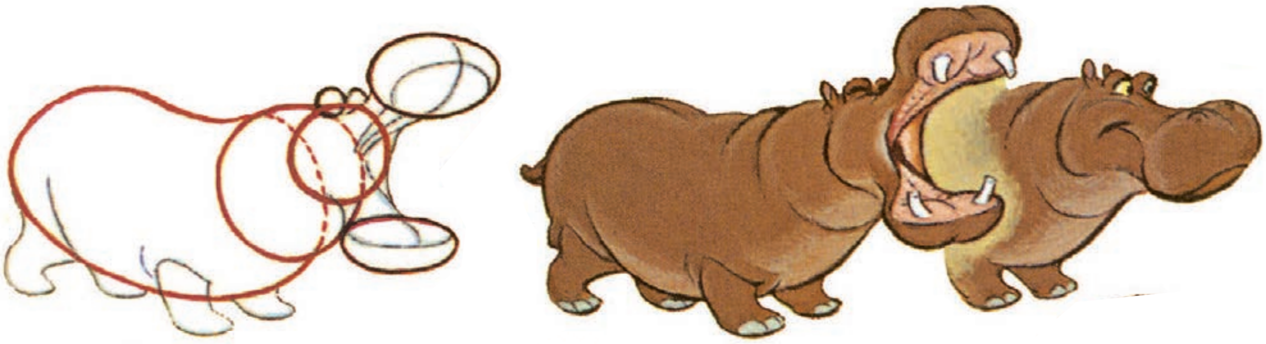
Following an Animation Formula

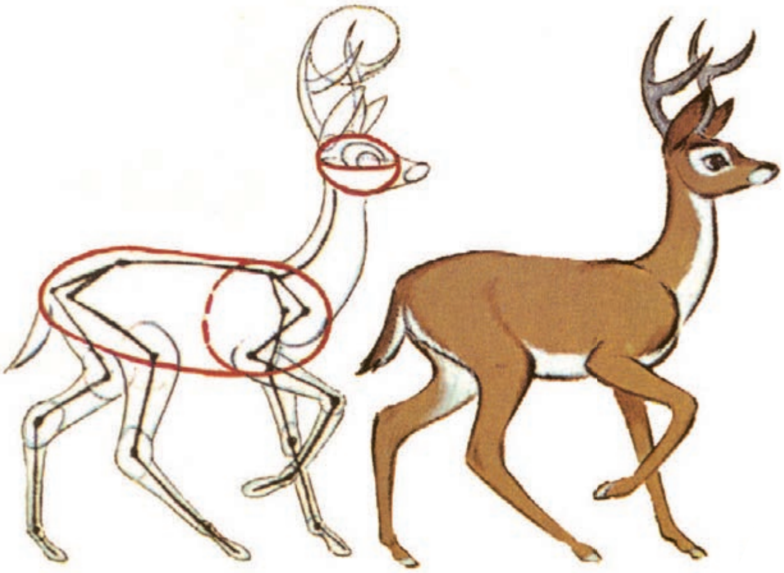
In animation, the bulldog jowls flop around like coattails in an overlapping secondary action (see page 106). That is a valuable technique for keeping poses alive. The bulldog has a double jaw with jowls. Draw the circular forms first, and then determine the perspective lines to build the heads and assemble the body. Using this formula, you can draw the character in any position and learn to be an animator.

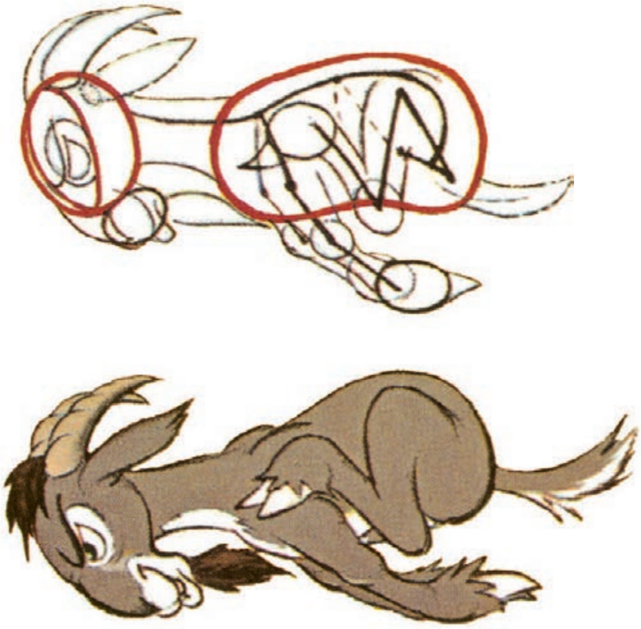
MORE ANIMAL CHARACTERS

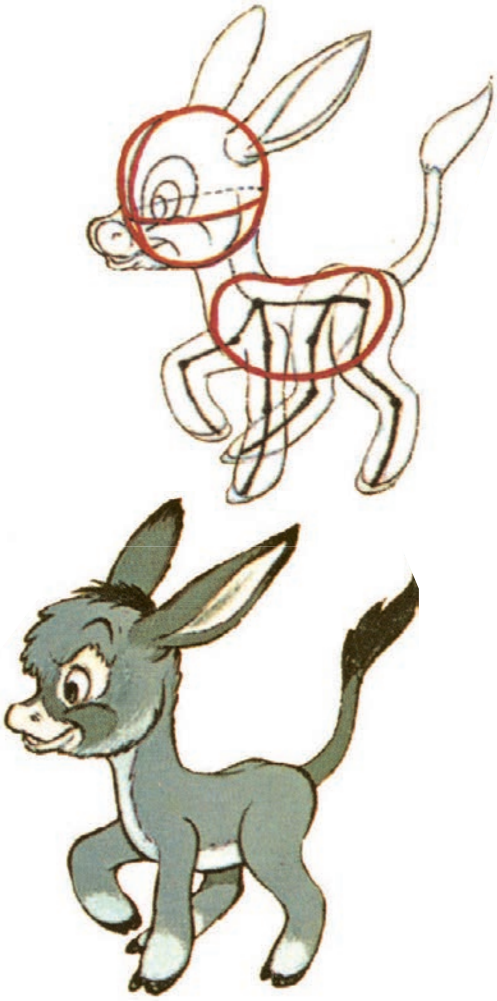
These pages contain a variety of animal characters with different expressions. The construction methods include the use of skeletal forms in combination with rounded and circular forms. To develop personality, some of these forms are squashed, while others are stretched. Keep in mind that facial expressions and body attitudes must complement one another.

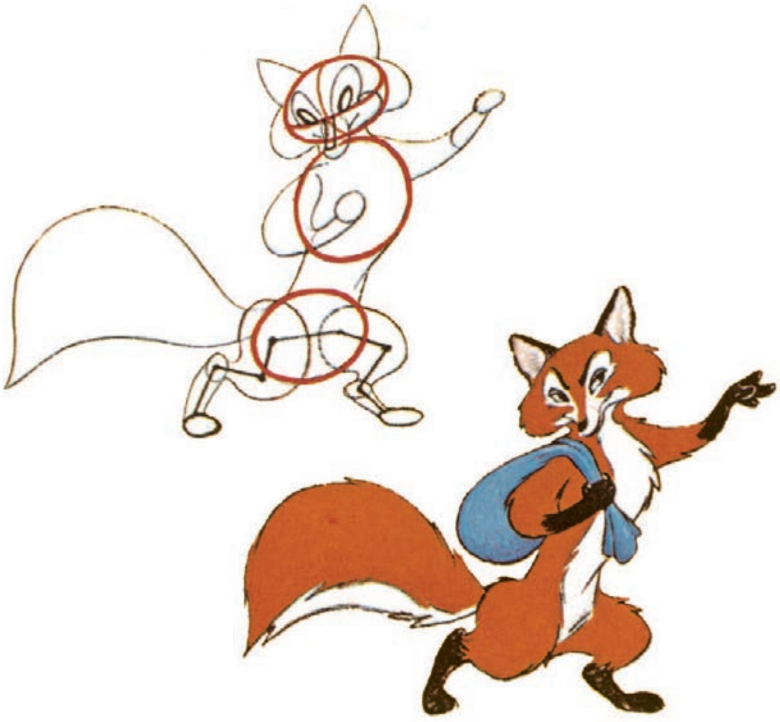


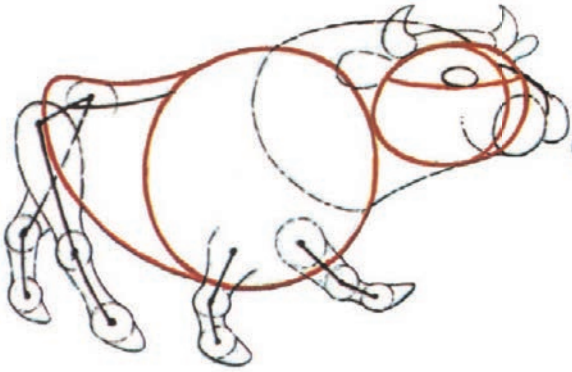


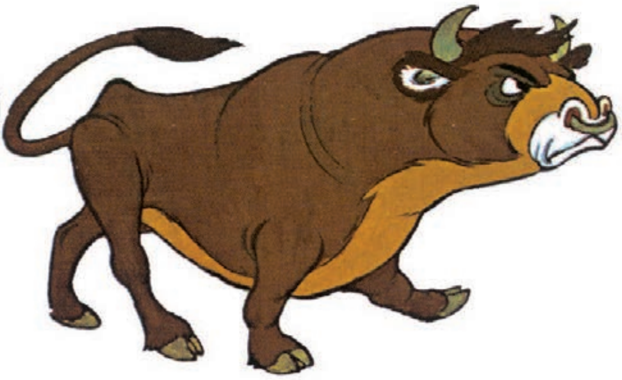


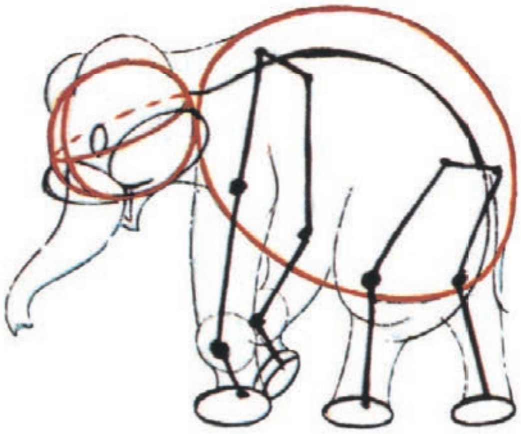


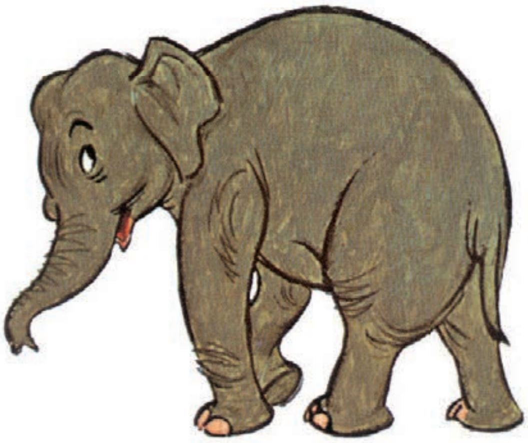


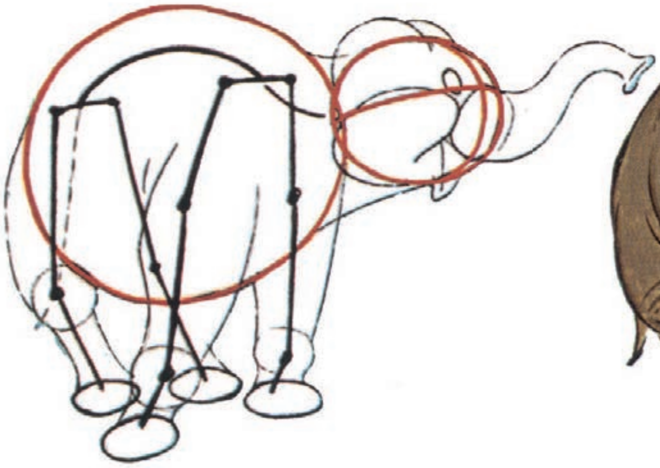


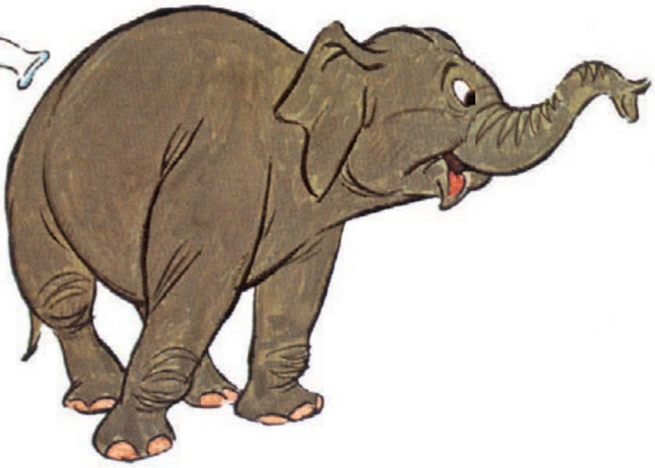


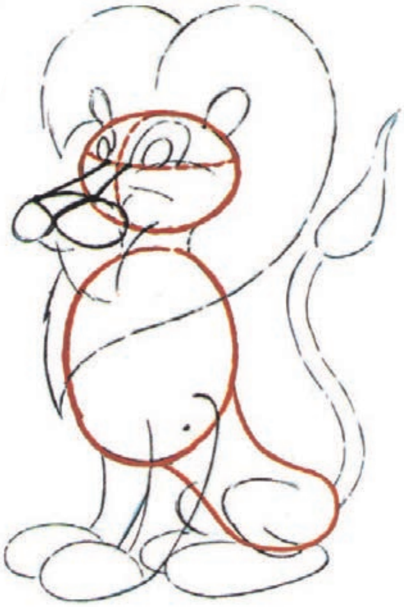


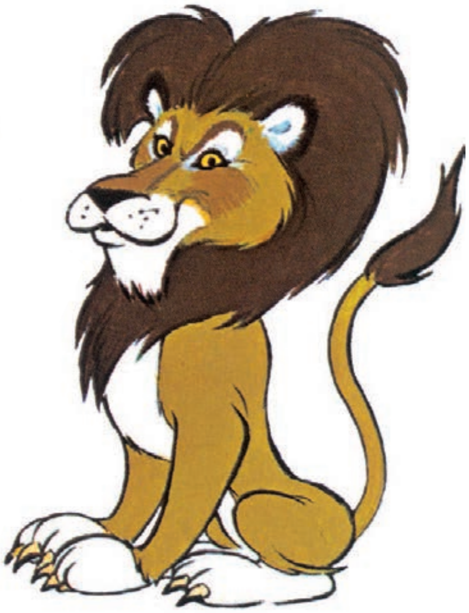


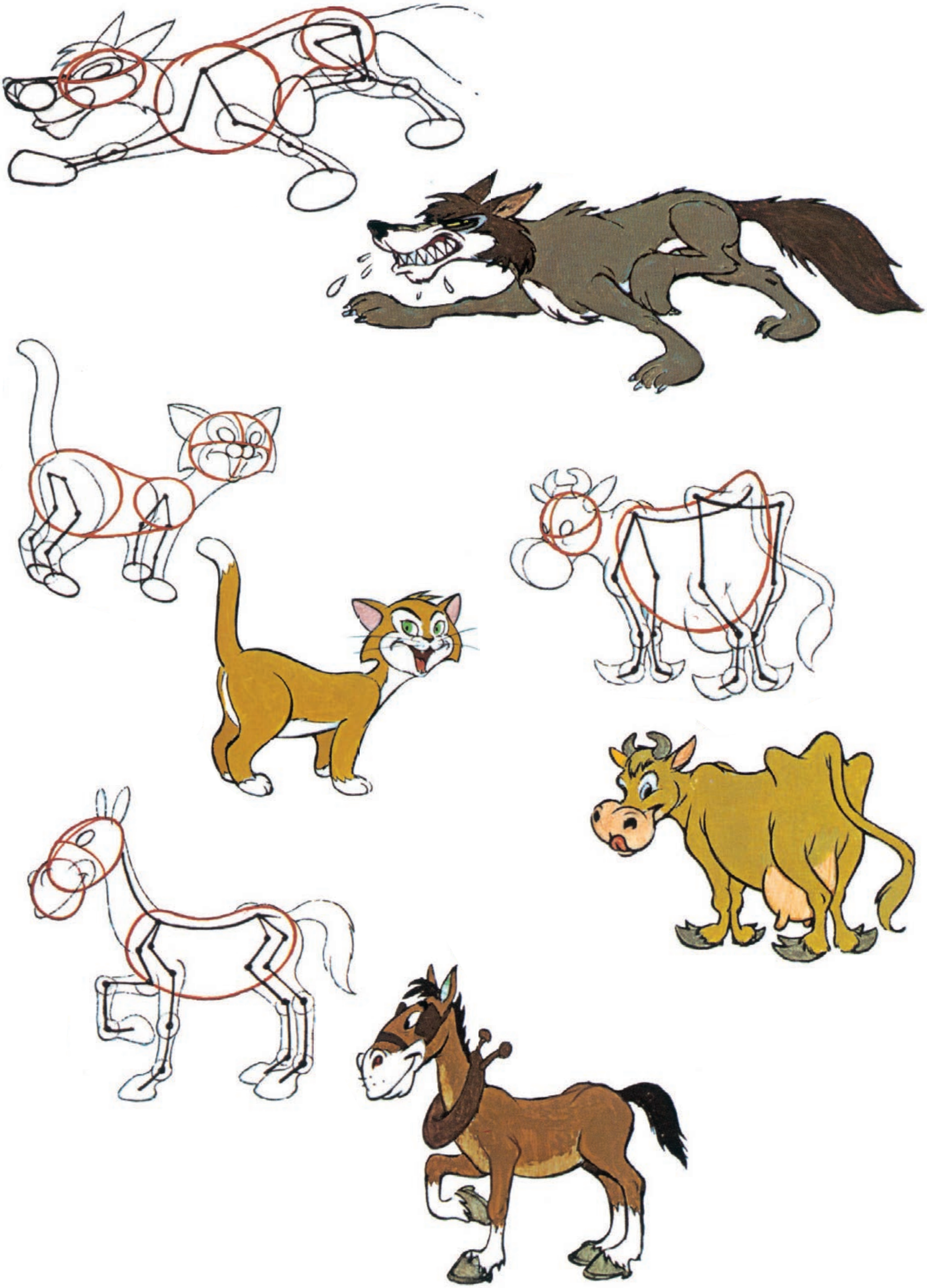








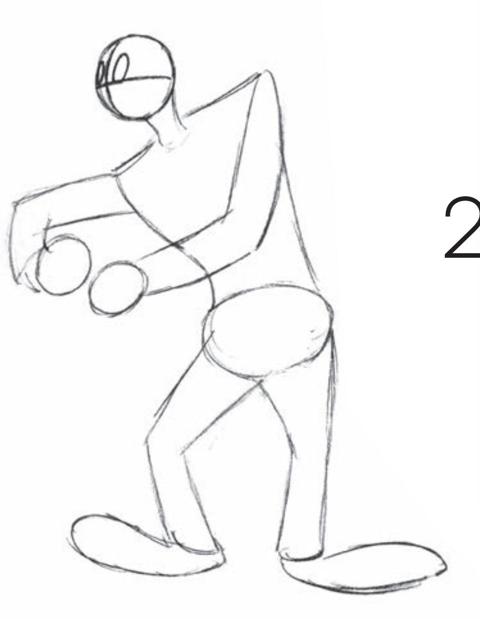




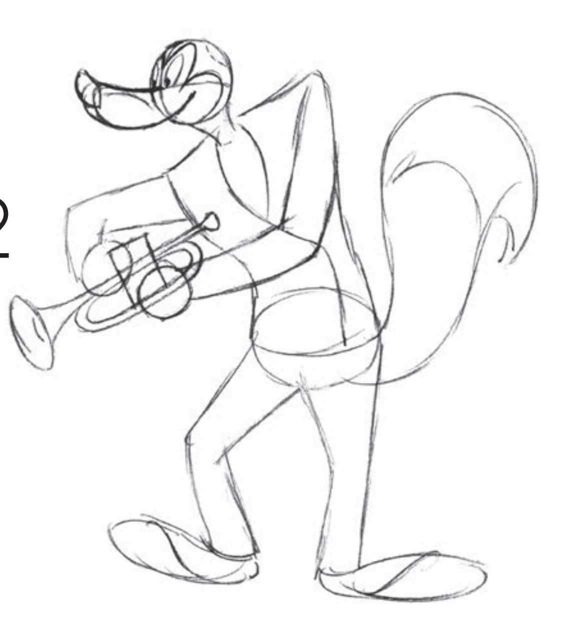
WOLVES

For this musical wolf, first rough in the basic construction. Fit on the details carefully, continuing to build the wolf. Clean up from construction and finalize the details.

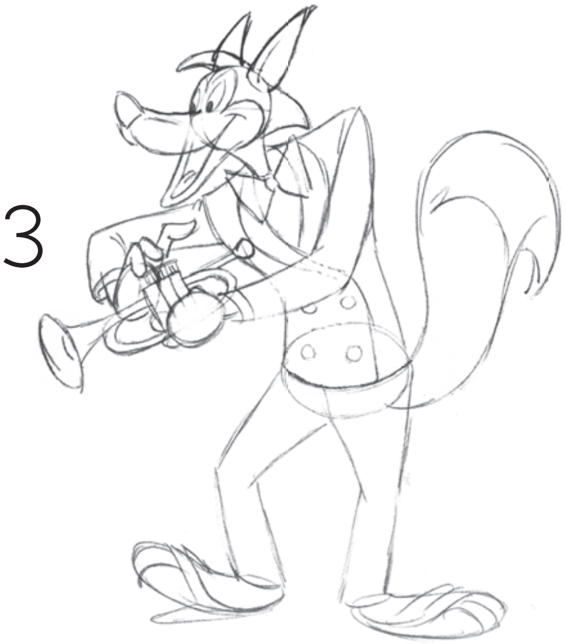
1



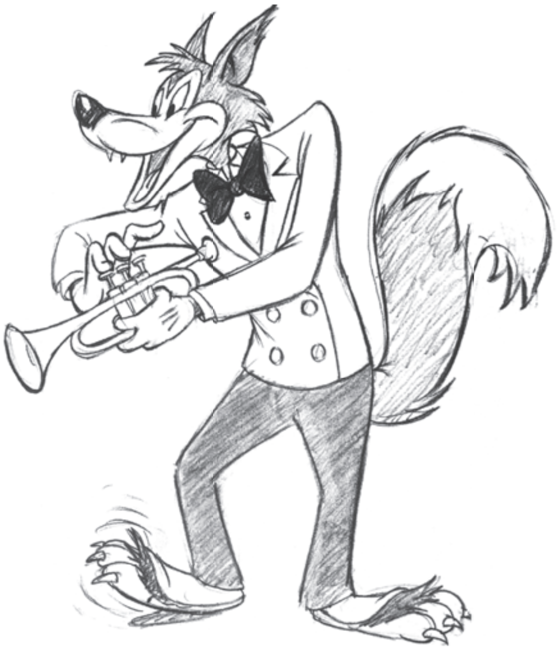
2



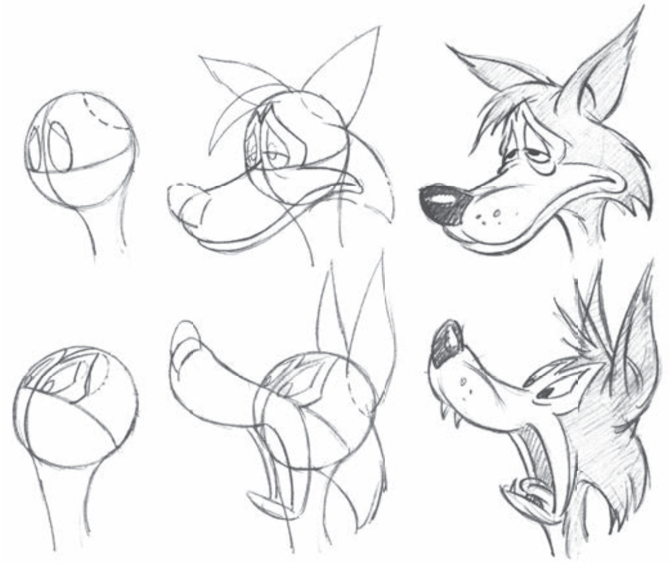
3

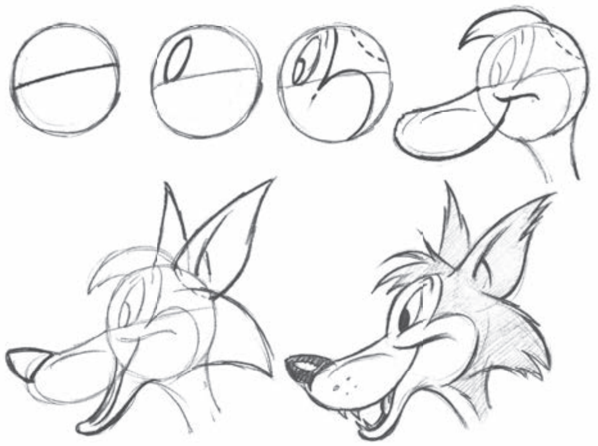


4



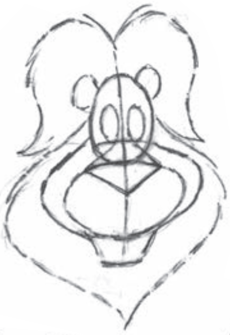
Practice drawing these wolf heads from all angles; they will help you draw many other types of heads with various expressions. Look at your own facial expressions in a mirror for a guide or study other expressions in this book.

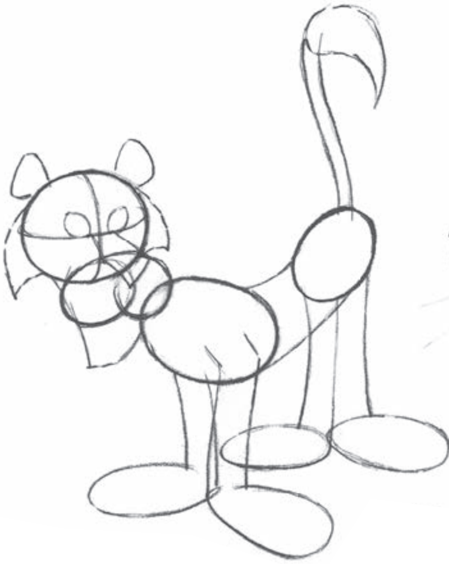


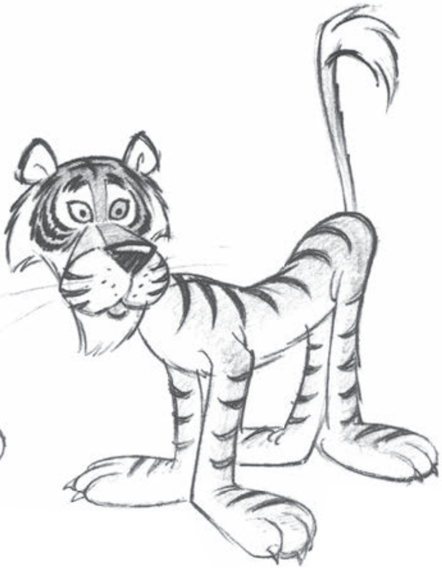


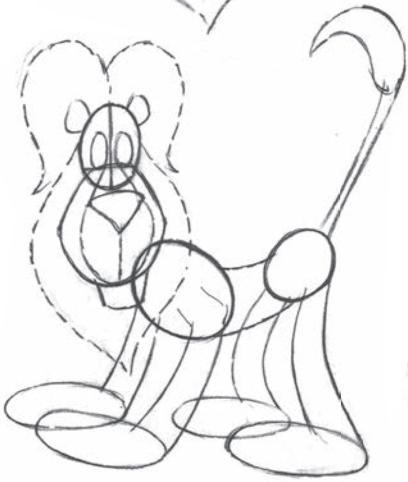
LIONS & TIGERS

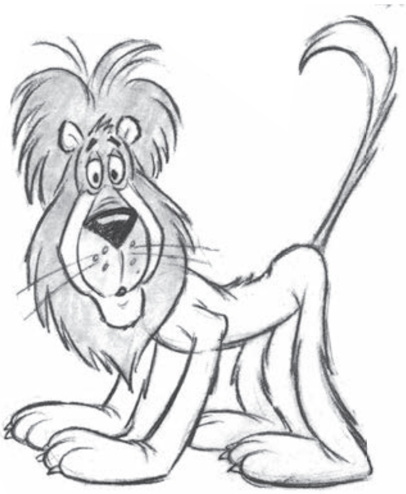
Here are suggestions for funny lion and tiger characters.

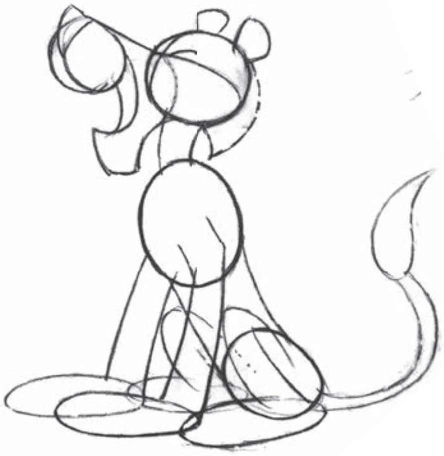


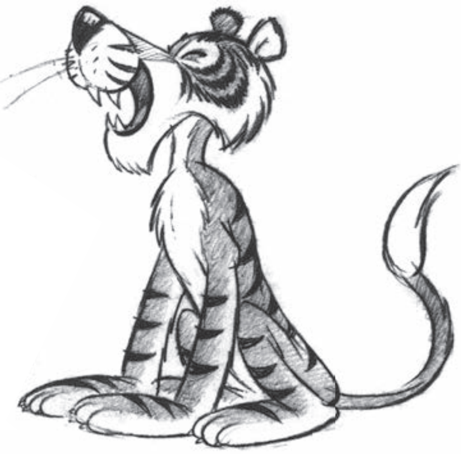


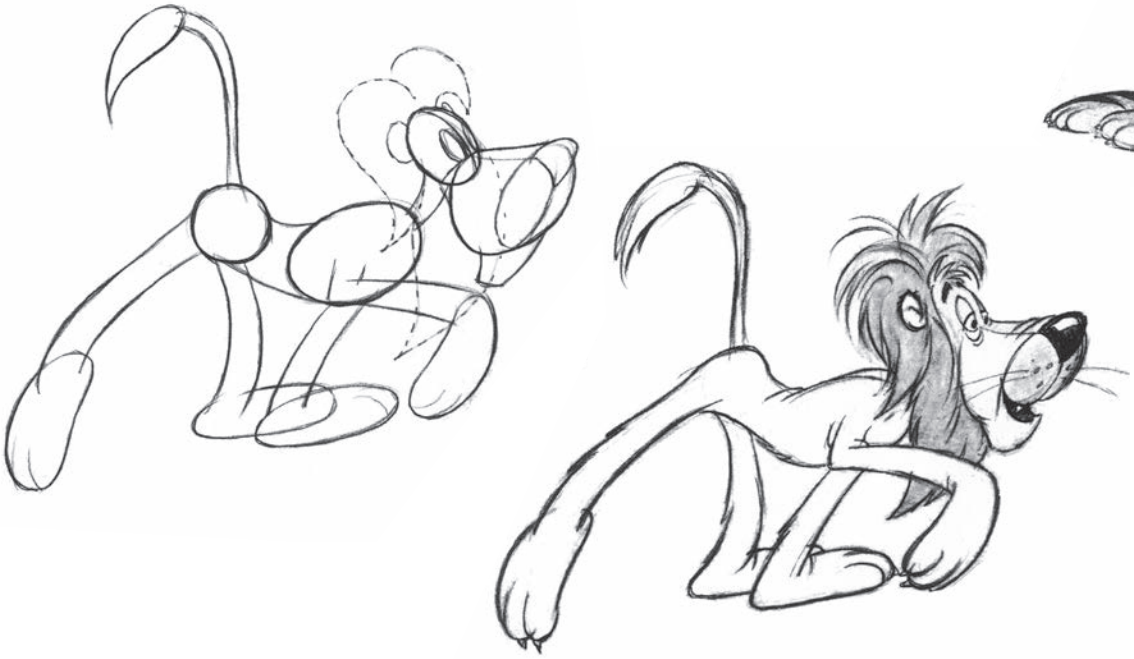






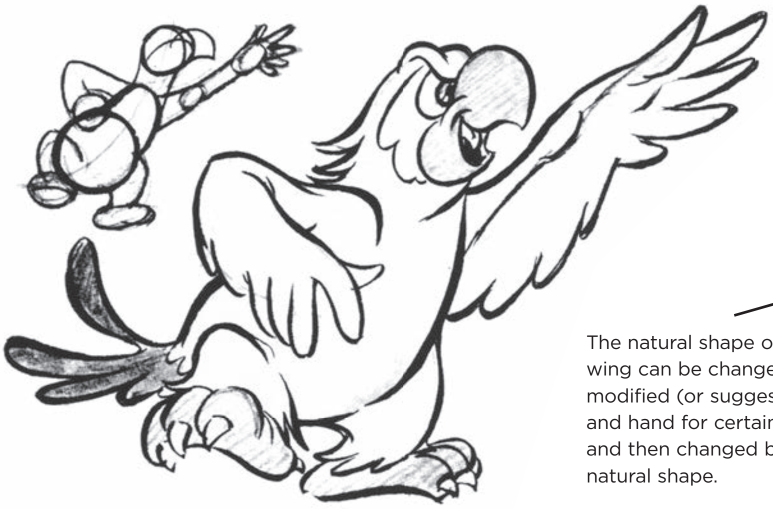


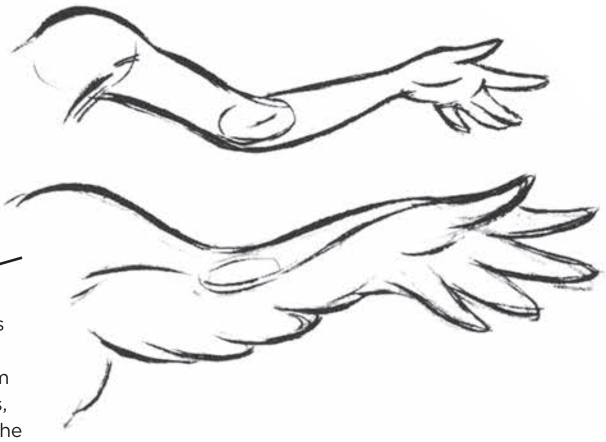




BIRDS

These avian characters differ greatly in personality and shape due to their proportions. Different shapes can suggest different personalities: cute, goofy, pugnacious, etc. Notice the difference in beaks, legs, necks, and wing sizes. For example, a baby chick has no neck (the head shape overlaps the body shape), while an ostrich's neck is exaggerated. All of the characters on these two pages have been developed using the circle and rounded form method.

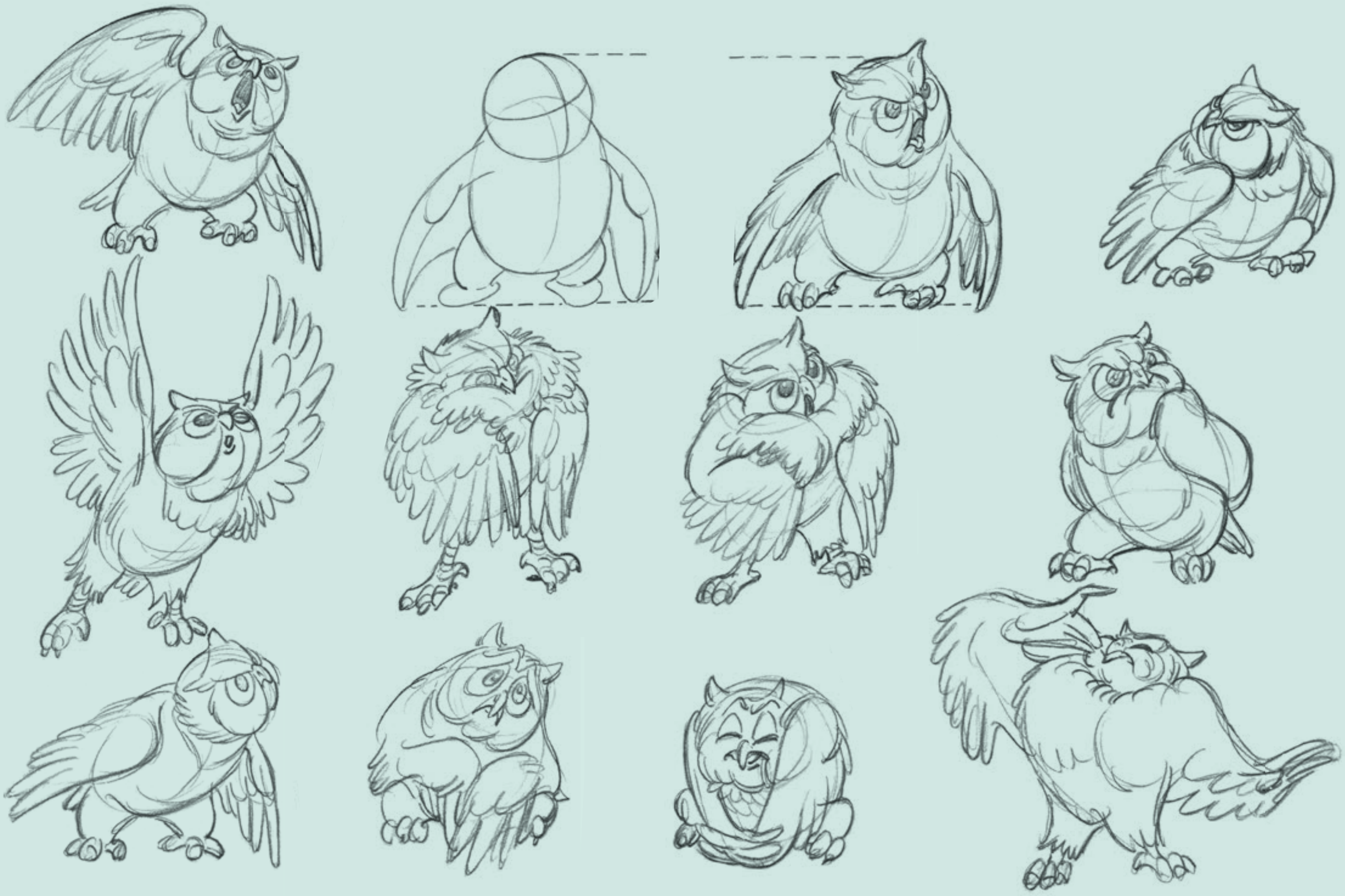


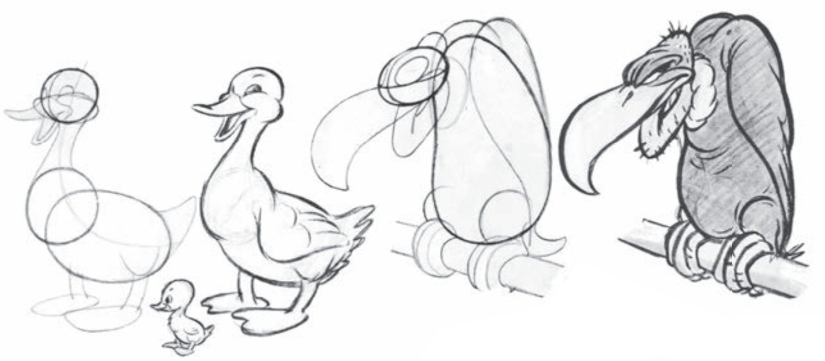


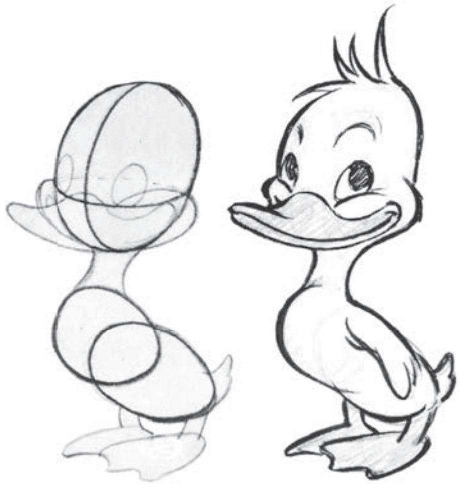
The natural shape of a bird's wing can be changed to a modified (or suggested) arm and hand for certain actions, and then changed back to the natural shape.

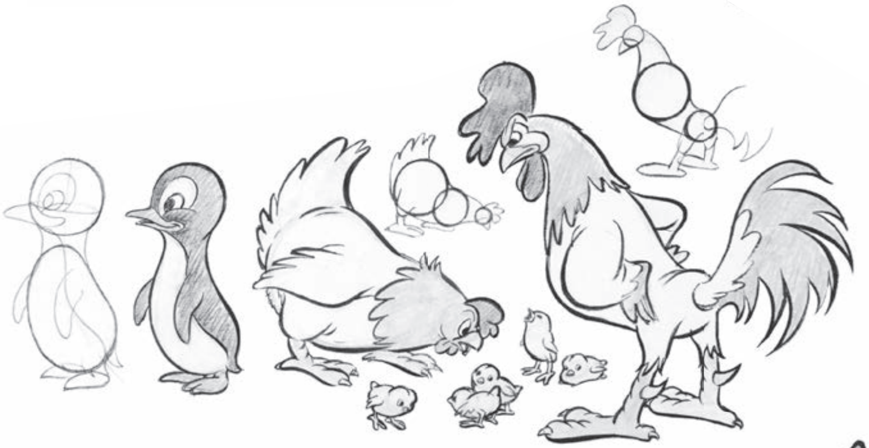
Expressing Personality Through Wings

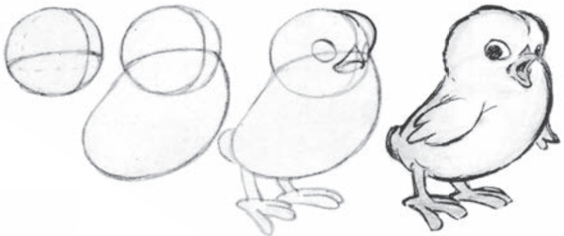
Here are some rough sketches of an owl to show you how its wings can be handled. They can be straight, or they can take on the characteristics of a hand with the feathers as fingers.

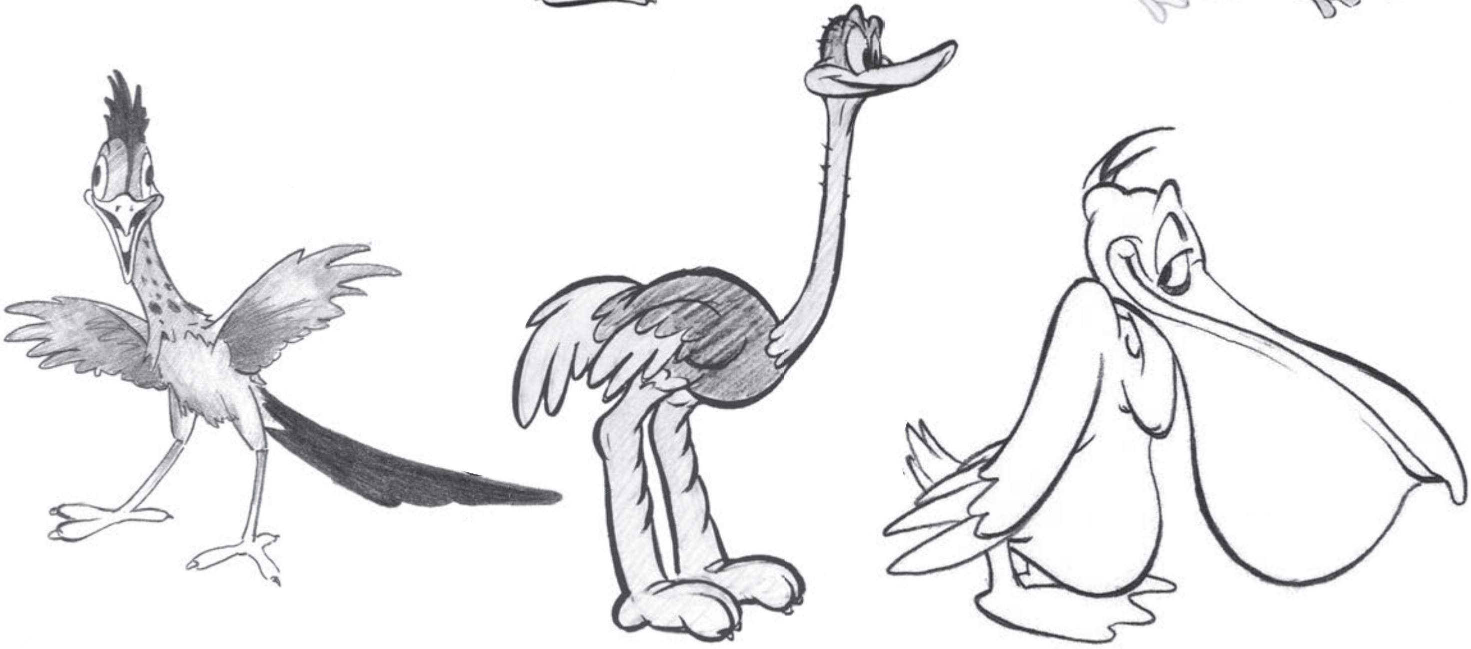


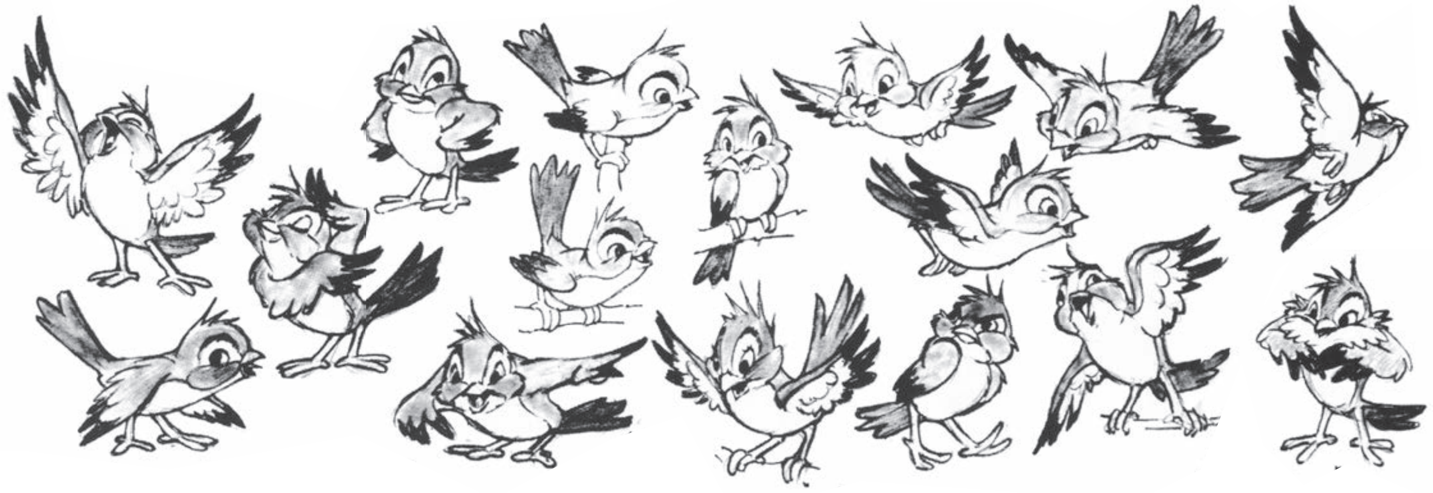










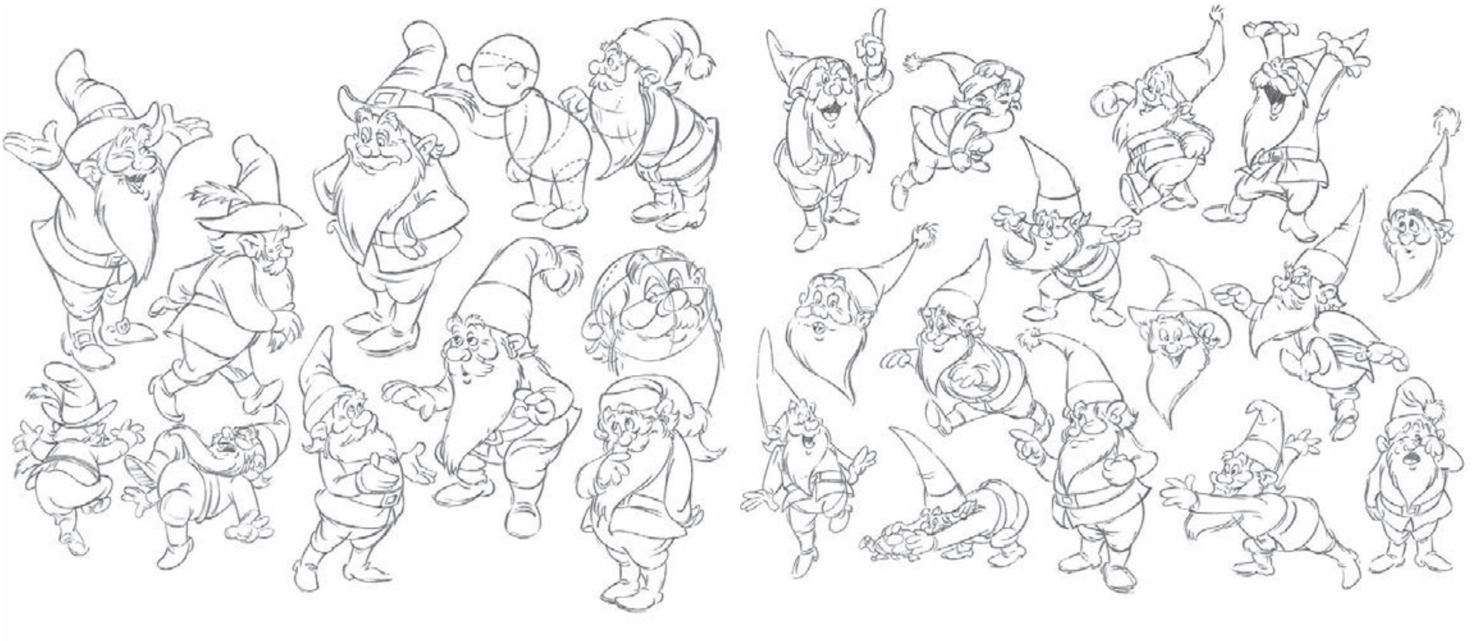


FICTIONAL PEOPLE

From the shy gnome to the wicked witch, there are as many fictional humanoid creatures as there are animal possibilities. There are typical characteristics to many well-known fictional characters. Some are included here.

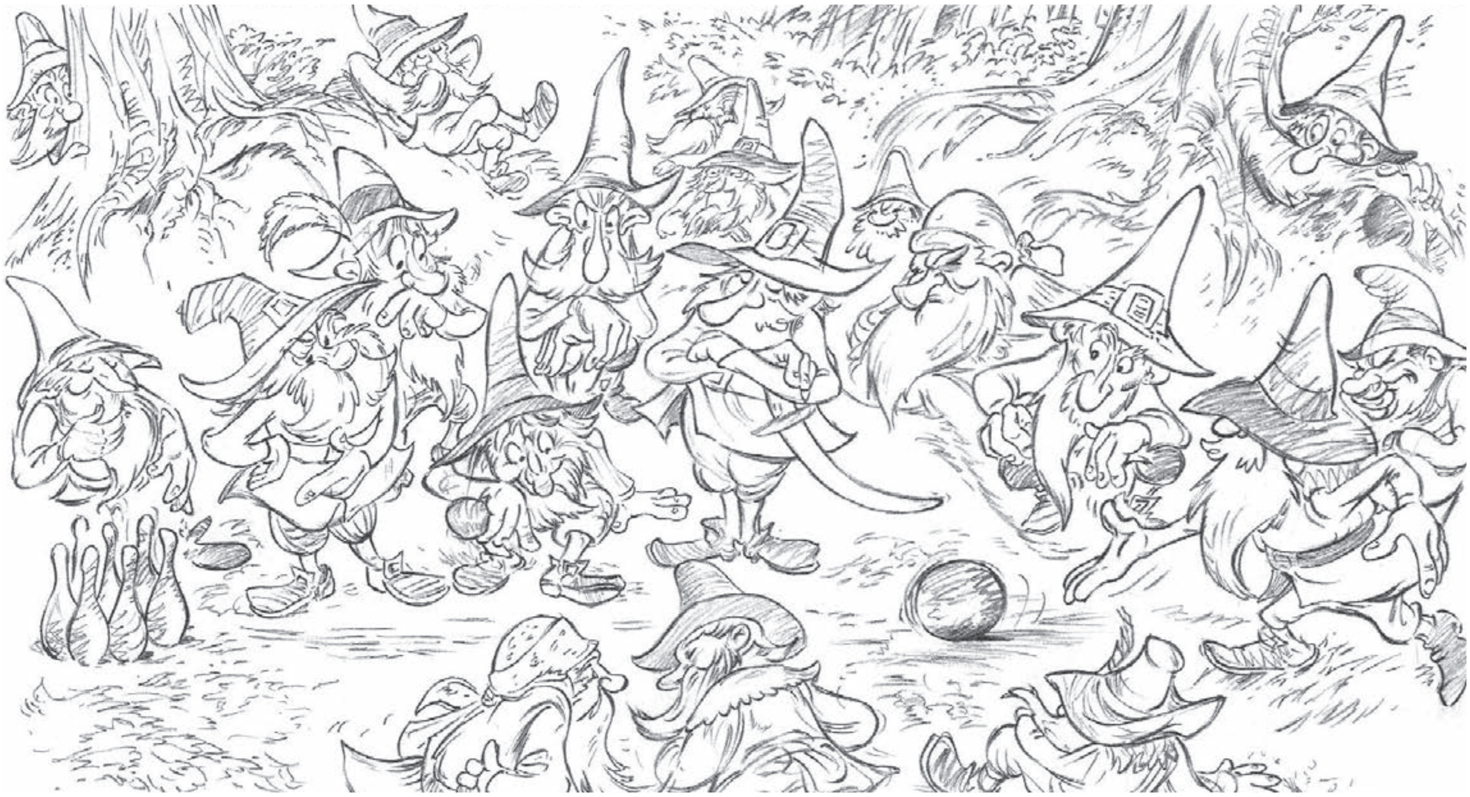
GNOMES

Gnomes are usually happy but shy characters. It is best to develop these little fellows with rounded forms.



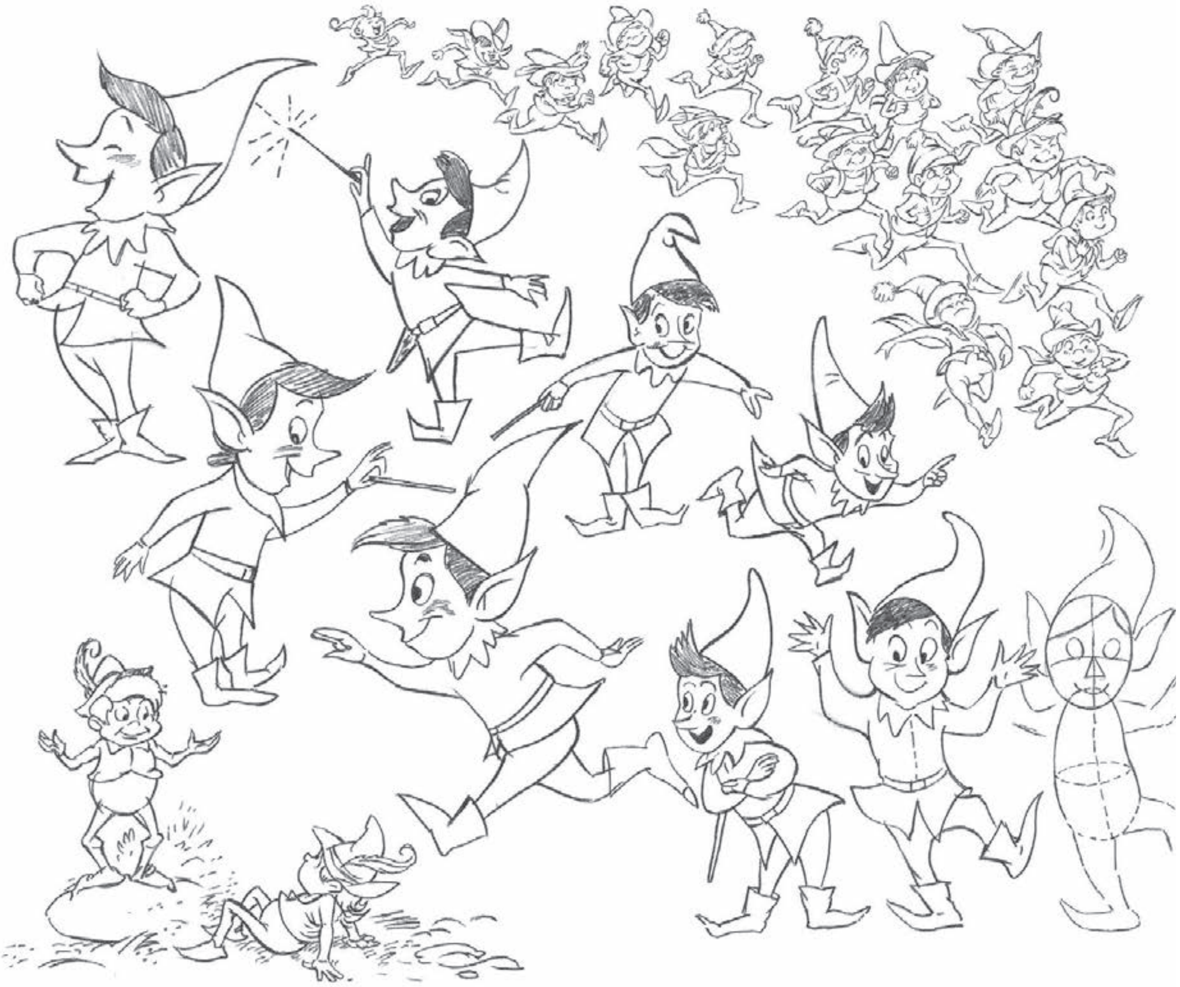
DWARFS

On this animation layout drawing (in pencil), a motley crew of little men assembles to play ninepins.



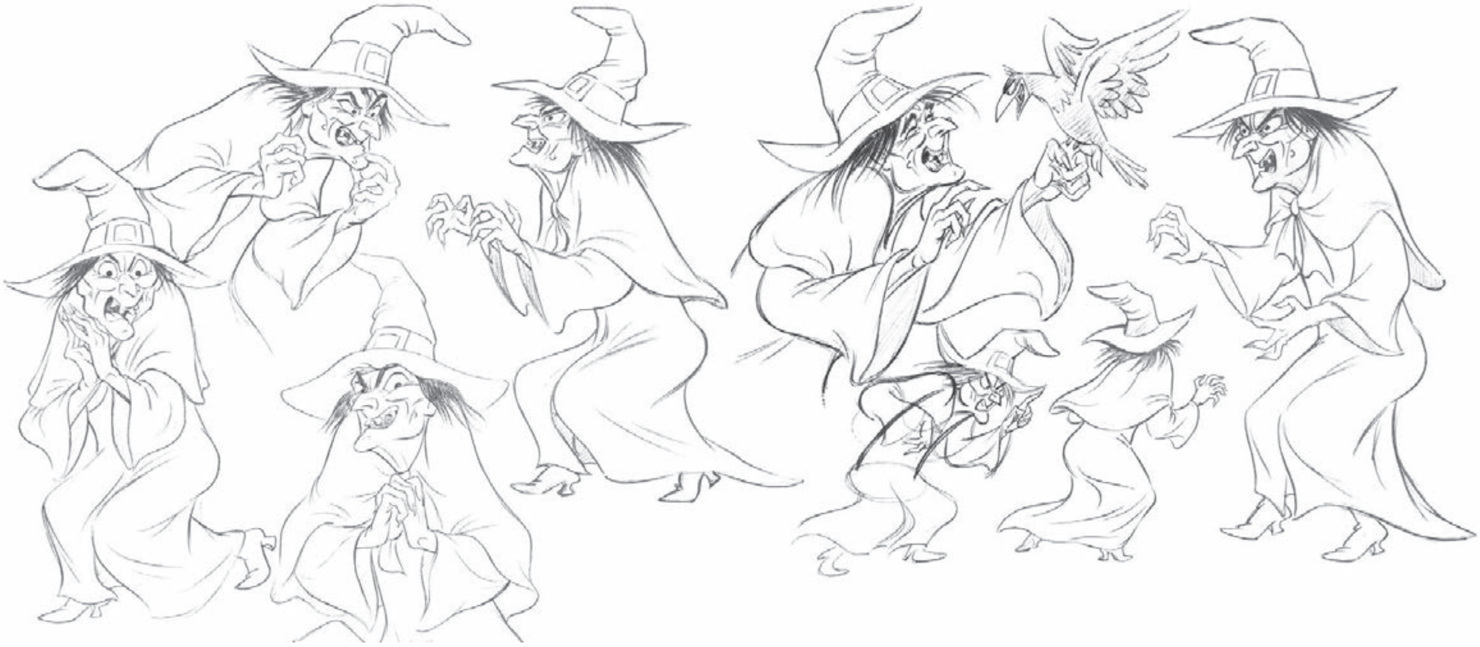
ELVES

Unlike gnomes and dwarfs, elves do not have facial hair. They are thin, youthful creatures with pointy features.



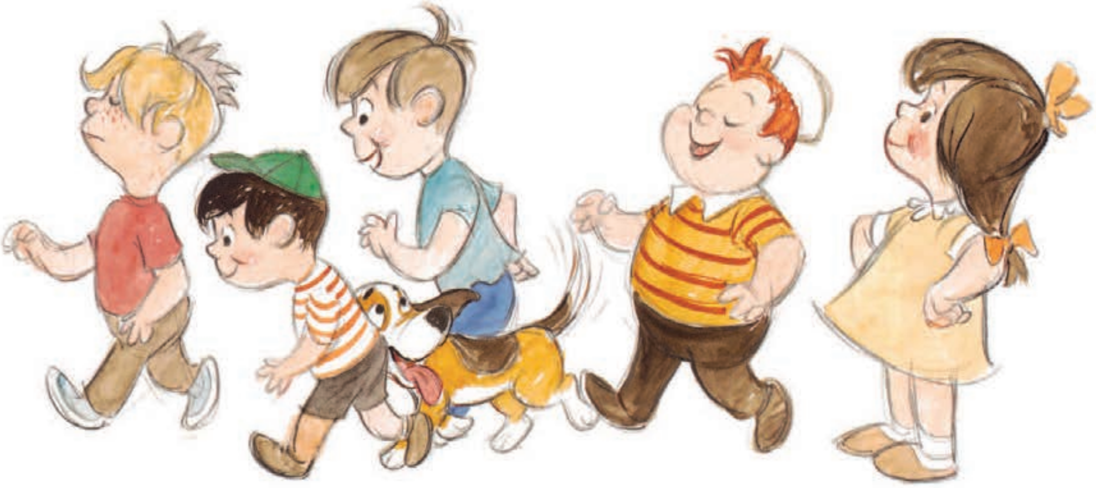
WICKED WITCH

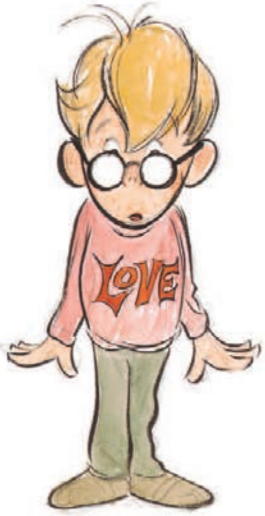
Personality can be projected through hand expression; you don't need to see the witch's face to know that she is wicked.

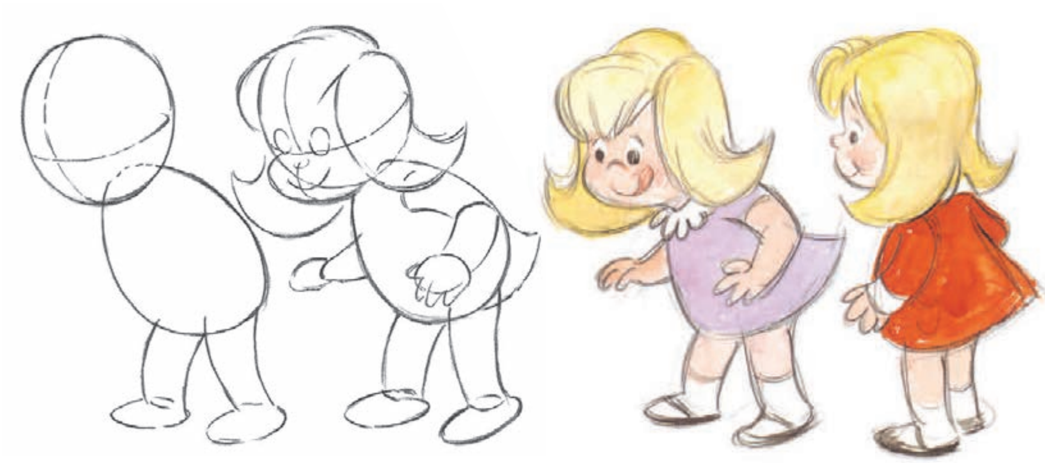


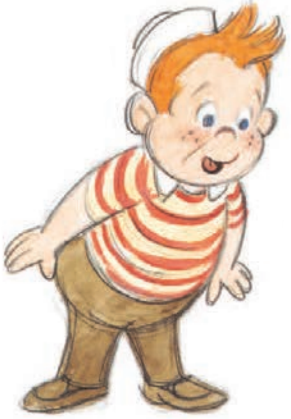
CHILDREN

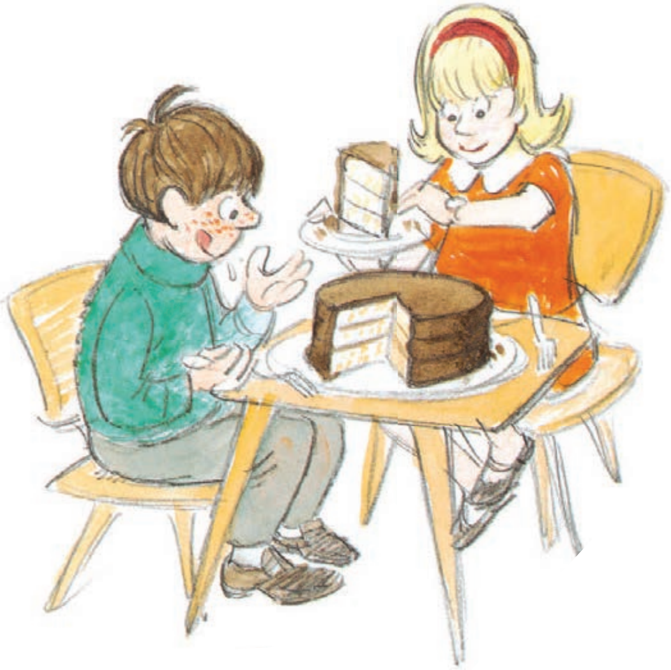
Kids come in all shapes and sizes. Young children have large heads and short legs, and their bodies are slightly pear-shaped (like "The Cute Character" on page 42). As kids grow older, the proportions change; they are more lanky and awkward looking. The head for this type remains a bit large.

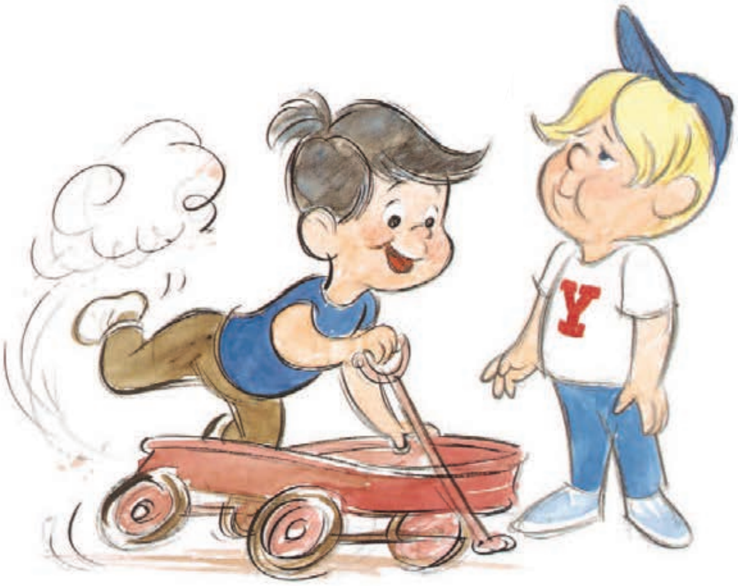






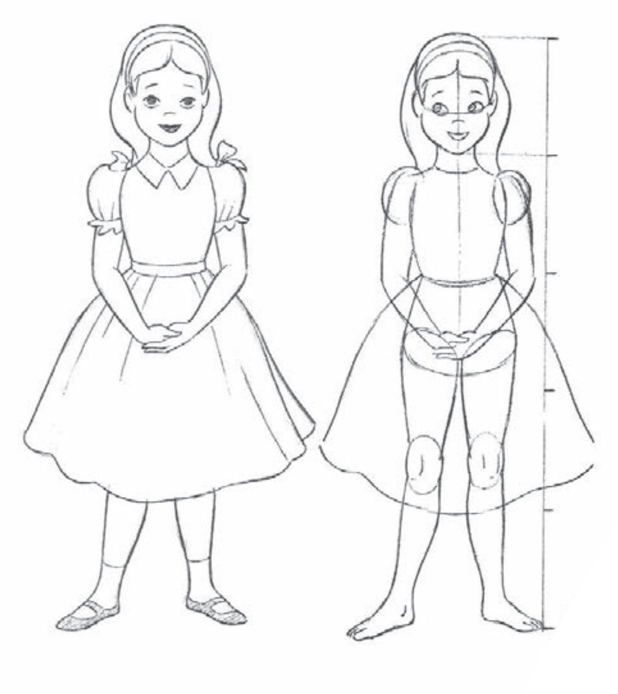




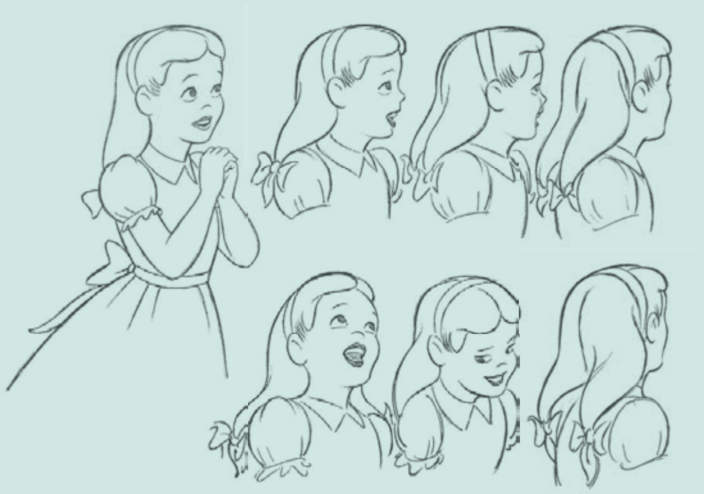


YOUNG HEROINE

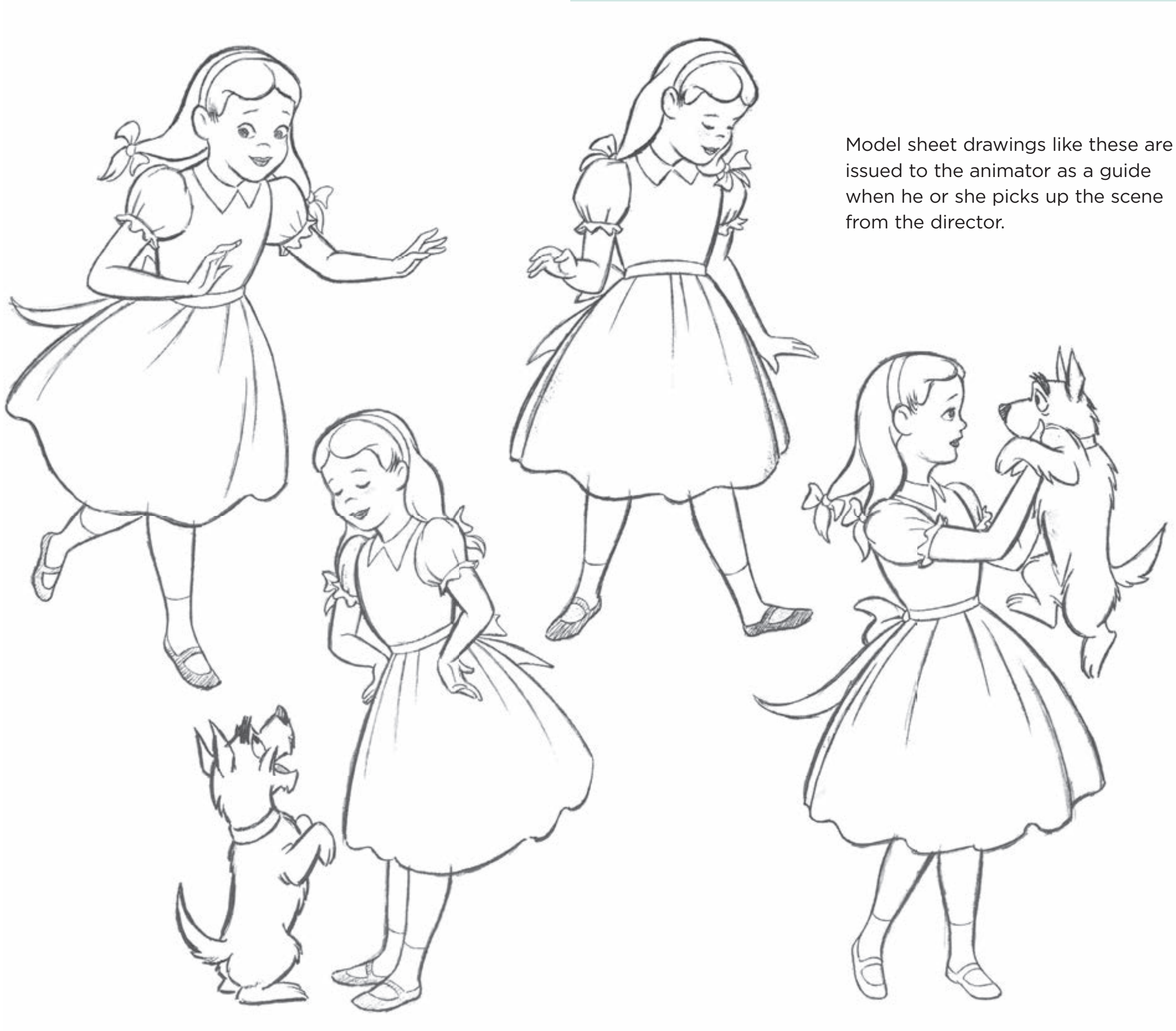
The proportions of this character are different than those of the children on the previous page. Use the chart below as a guide to draw this young girl. The chart shows the full-figure proportions based on a height of five head lengths. The legs are half the height ($2\frac{1}{2}$ heads), the waist is two heads from the top, and the arms and hands are a little more than two heads long. Use this scale to draw the young girl accurately in any position.



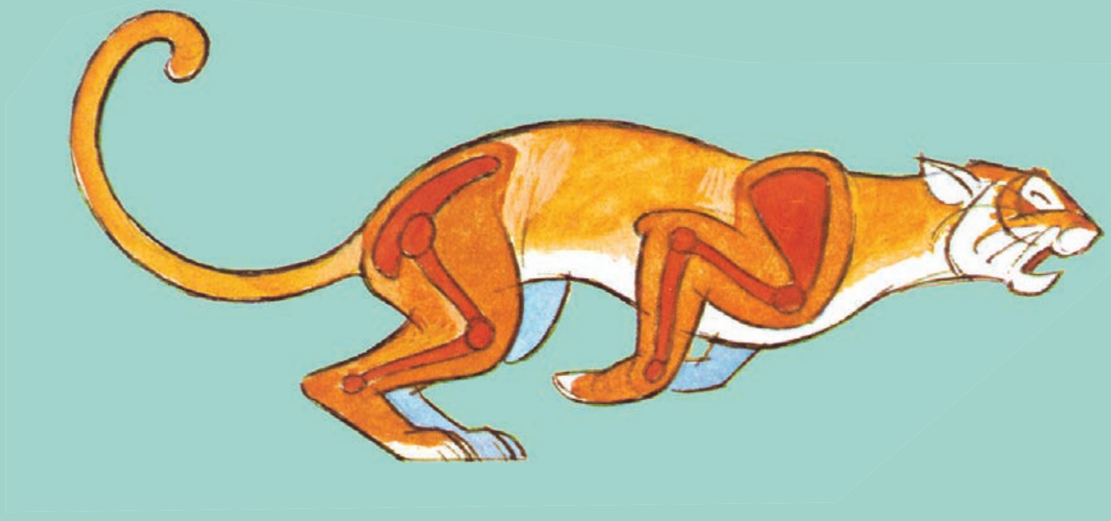
Drawing the Face in any Position

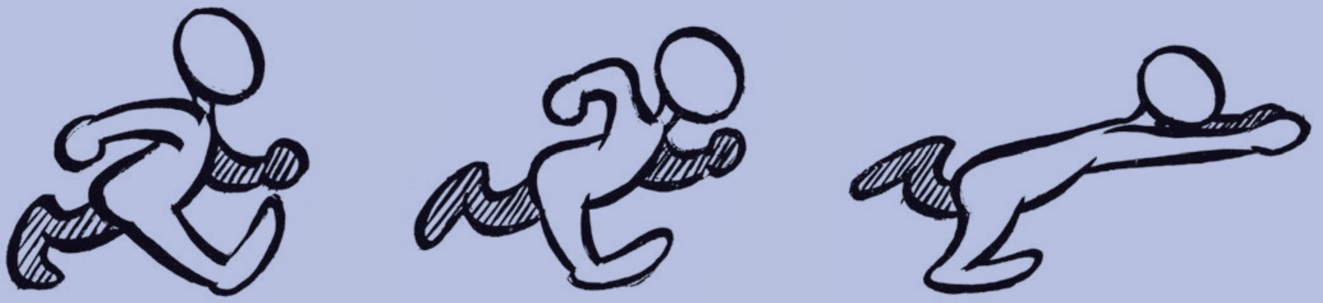


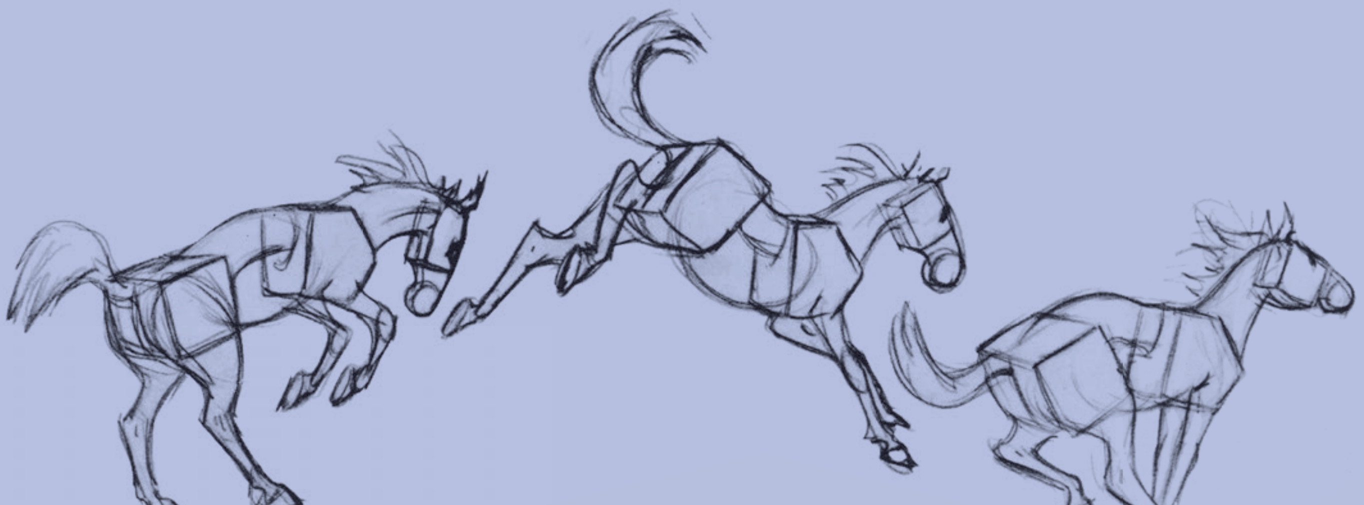
Facial features move with the head: up, down, and sideways. The position and angle of the eyes change with the head movement; they must be drawn to look in the direction specified by the head position. Here the change is from a $\frac{3}{4}$ front view to a $\frac{3}{4}$ back view where the eyes are not seen at all. Use the rules of perspective and foreshadowing to accomplish these transitions accurately.



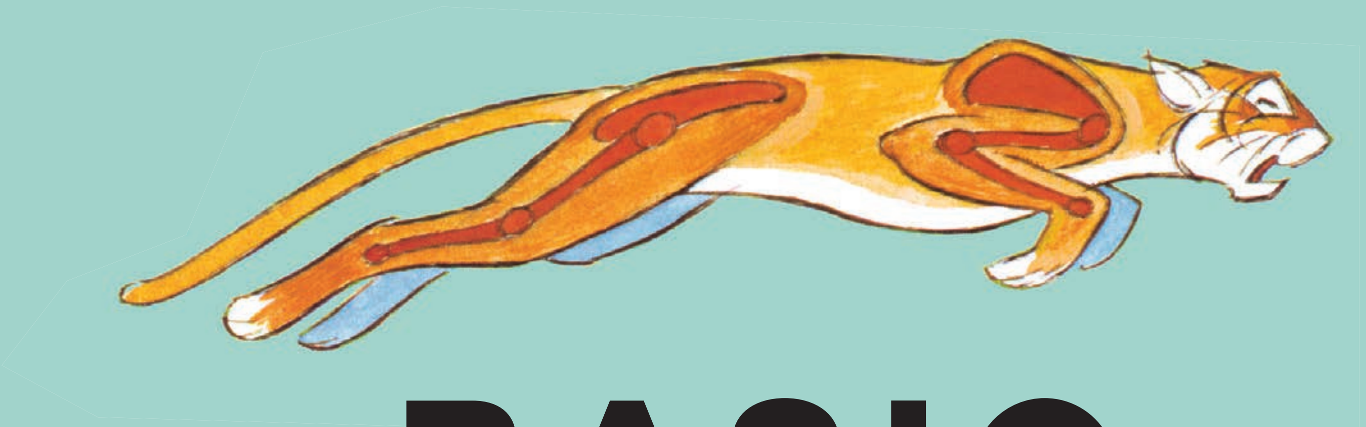
Model sheet drawings like these are issued to the animator as a guide when he or she picks up the scene from the director.



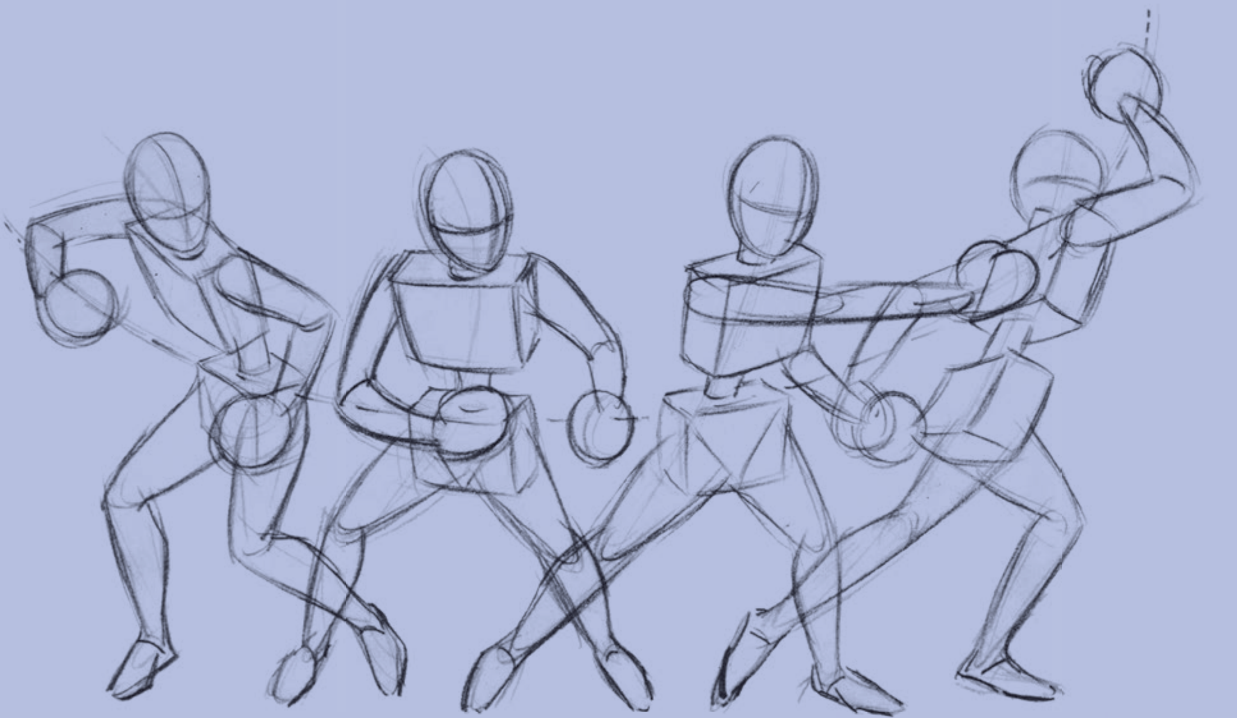




CHAPTER 4



BASIC CHARACTER MOVEMENT

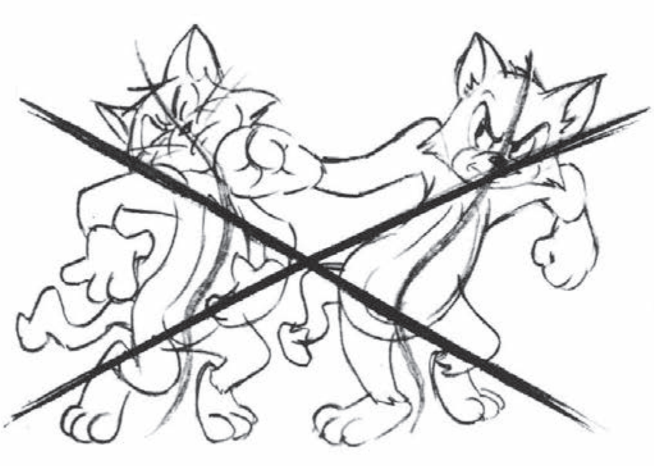


COMING TO LIFE

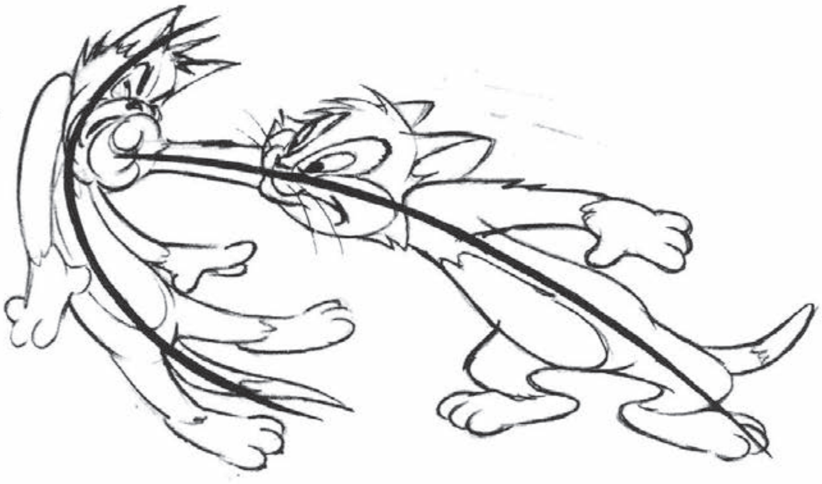
Once a character has been developed, the animator must consider the types of actions that are appropriate for it. This chapter includes rhythm charts for creating movements of both humans and animals walking, running, jumping, skipping, and more. With these you can create animation cycles, which are a series of drawings that take a character through a complete movement (for example, a walking step). By following the instructions in this chapter, you can make any character—person, animal, or inanimate object—come to life through animated movement.

LINE OF ACTION

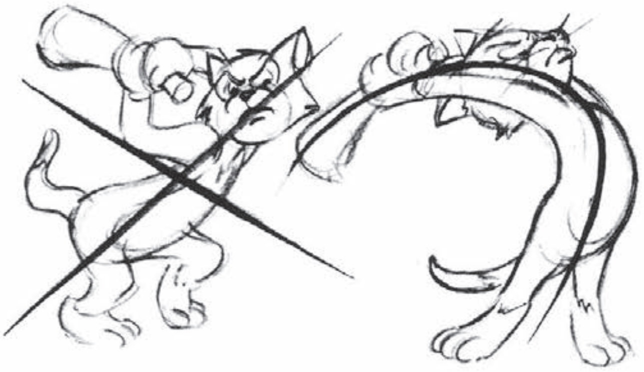
A character's basic design should contain a sense of movement to convey a message to the viewer about the character's actions and intended actions. One way to accomplish this is to use the "line of action" that is the basis for rhythm, simplicity, and directness. A "line of action" is an imaginary line extending through the main action of the figure. Plan your figure and its details to accentuate this line. By doing so, you will strengthen the dramatic effect.



Wrong! The lines of action do not fit.

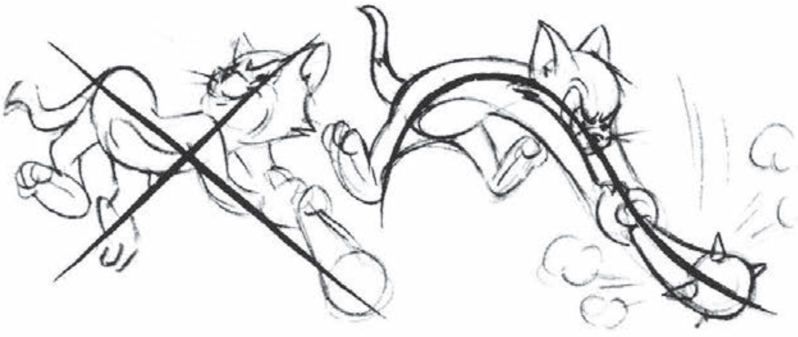


Correct! The lines of action fit and are accentuated.



Wrong!

Right!

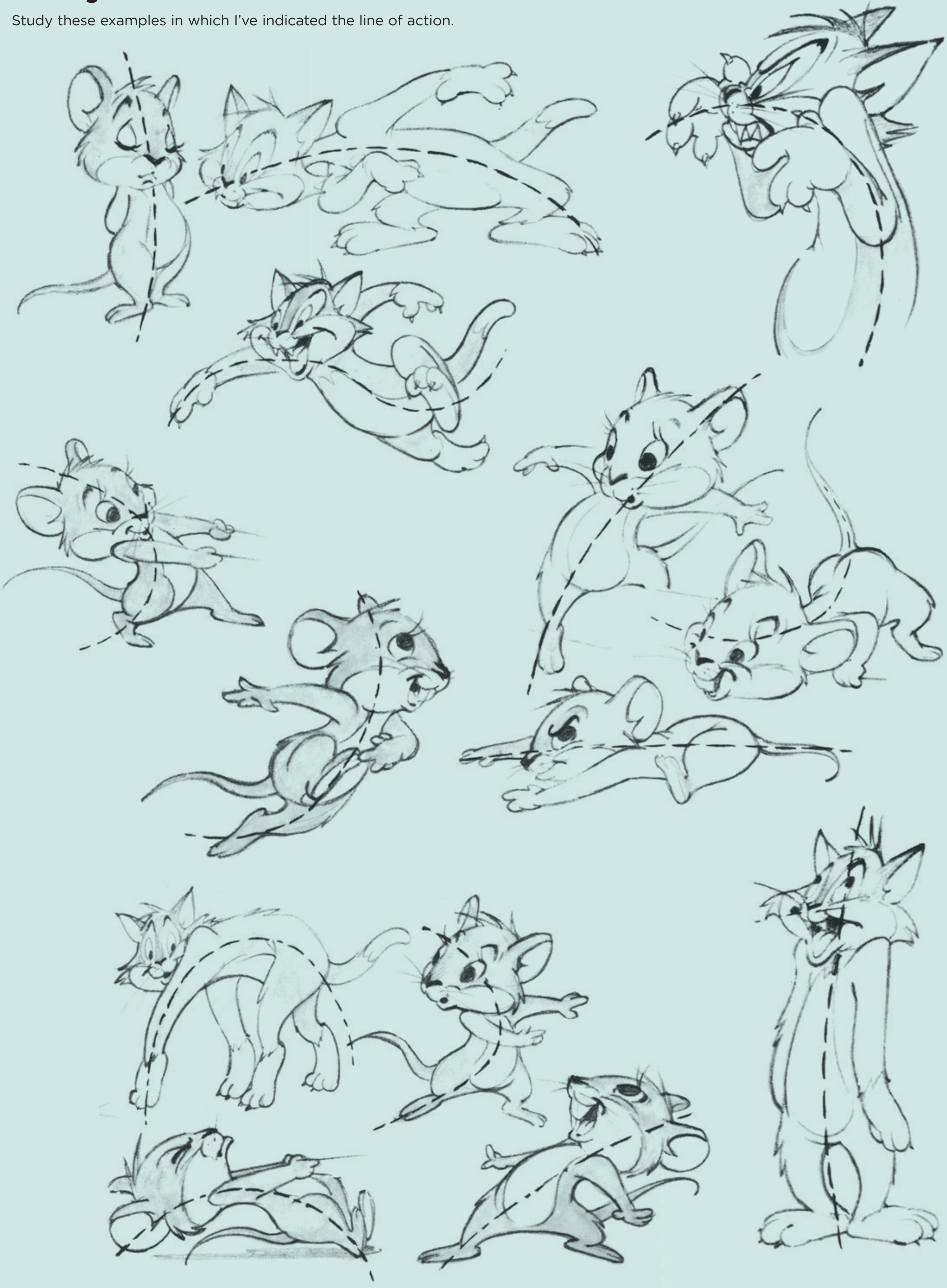


Wrong!

Right!

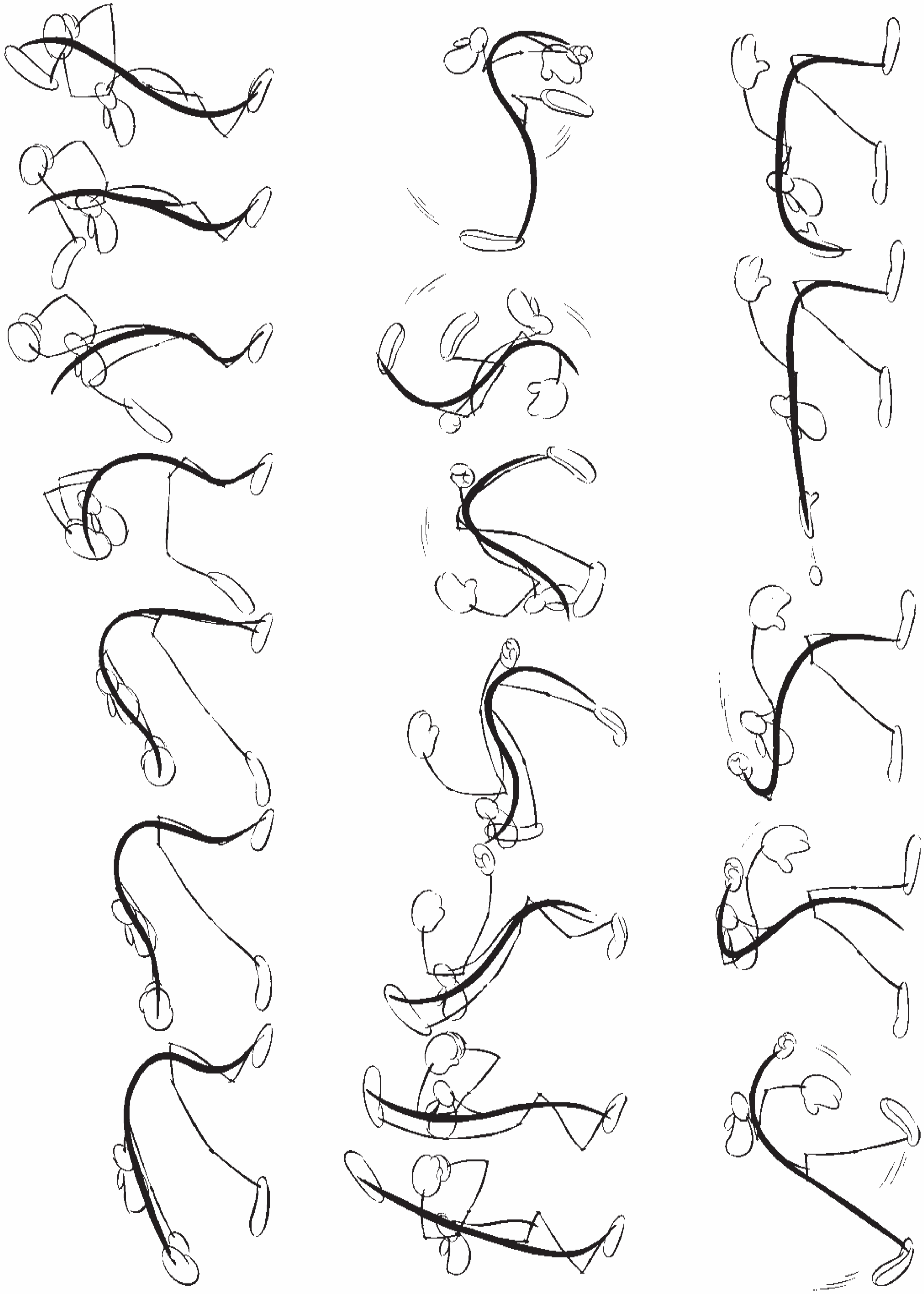
Looking at Line of Action

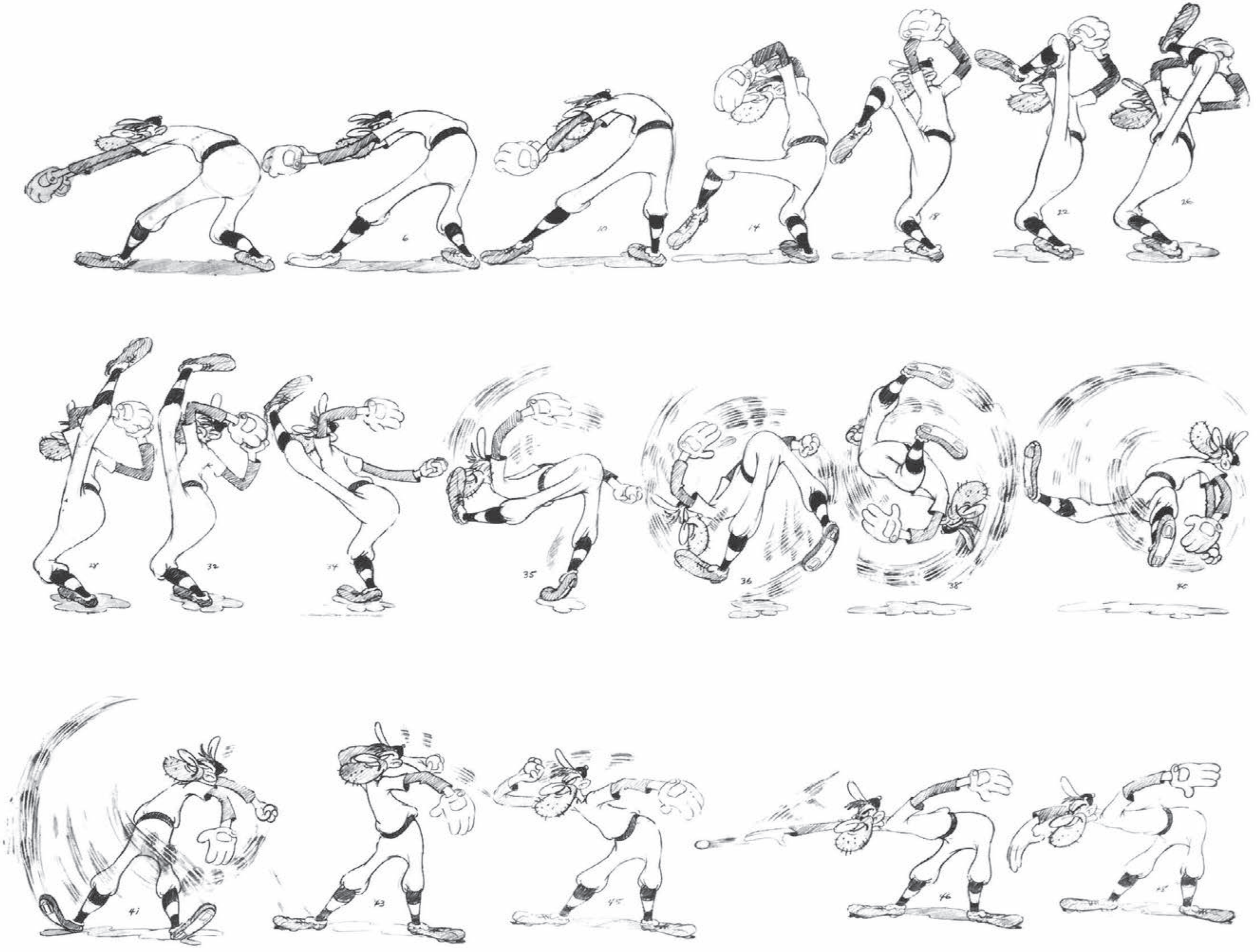
Study these examples in which I've indicated the line of action.



LINE OF ACTION IN ANIMATION

The line of action is the basis for rhythm, simplicity, and directness in animation. The first thing to draw when constructing a figure is the line of action. Then draw the skeleton and the details. Finally, animate all the details.



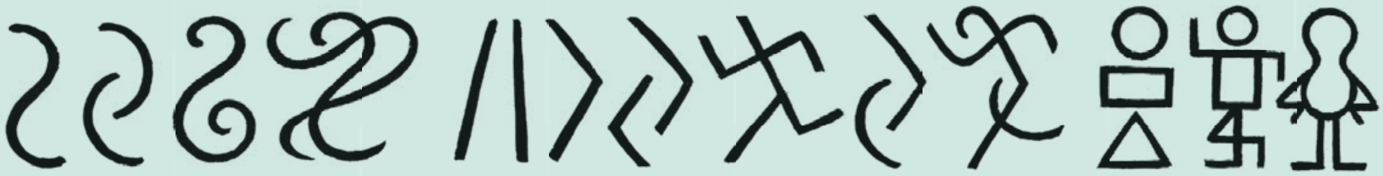

6
10
14
18
22
26
28
32
34
35
36
38
40
41
43
45
46
48

RHYTHM & DESIGN

Rhythm and design are the secret formulas behind the appeal and charm of great cartoon art. Artists have instincts that tell them these things. The abstract design basis below should help you develop these instincts.

Using Abstract Rhythm Lines

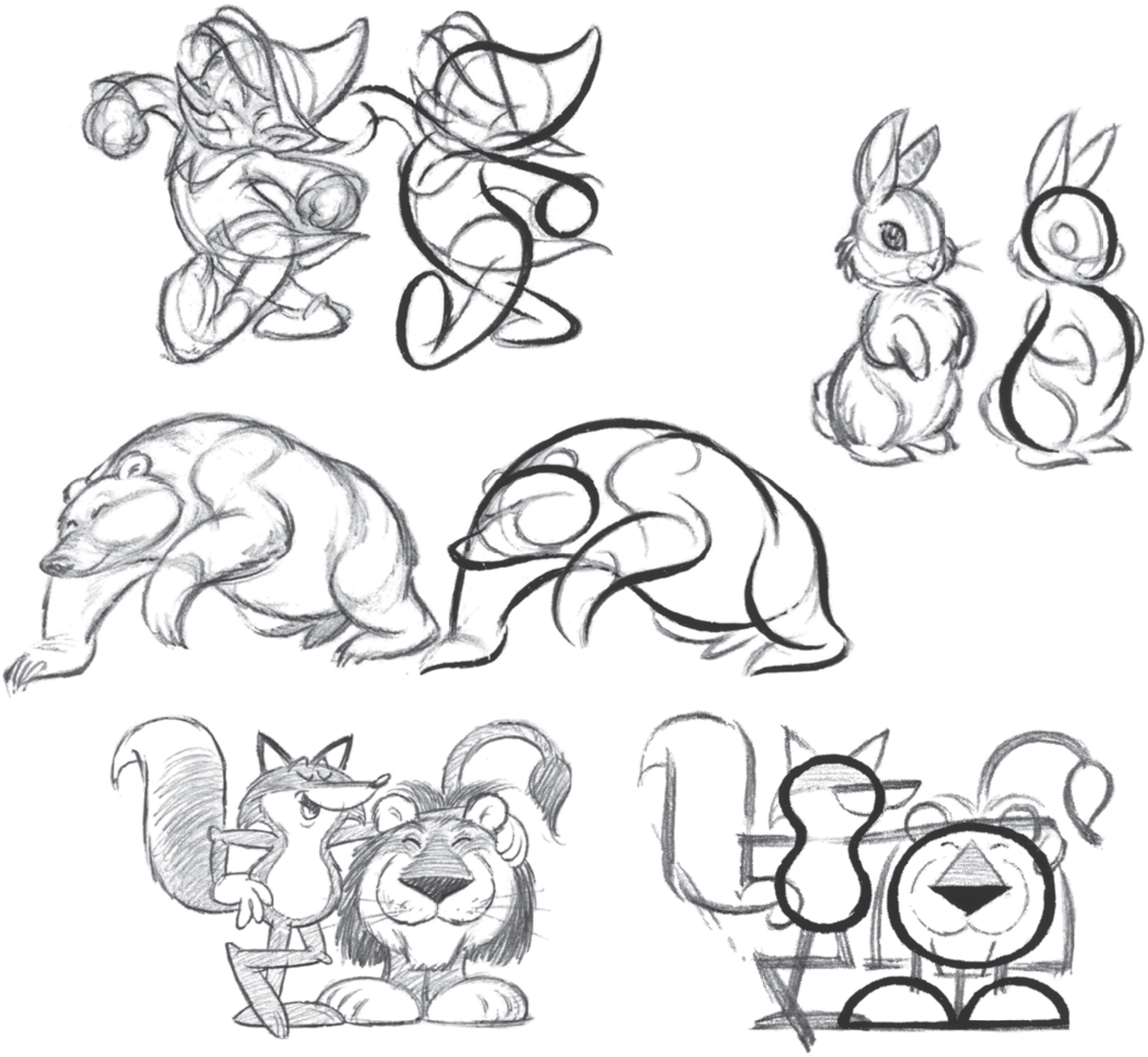
The basic "S" curve of rhythm and the opposing arcs (second from left) have great value for your drawings. Learn their values, such as the "value of a straight line." Many drawings fail without it.



The "line of beauty" curve and variations

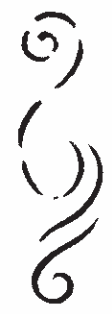
The straight line becomes angular designs

Geometric shapes are the basis of many cartoons

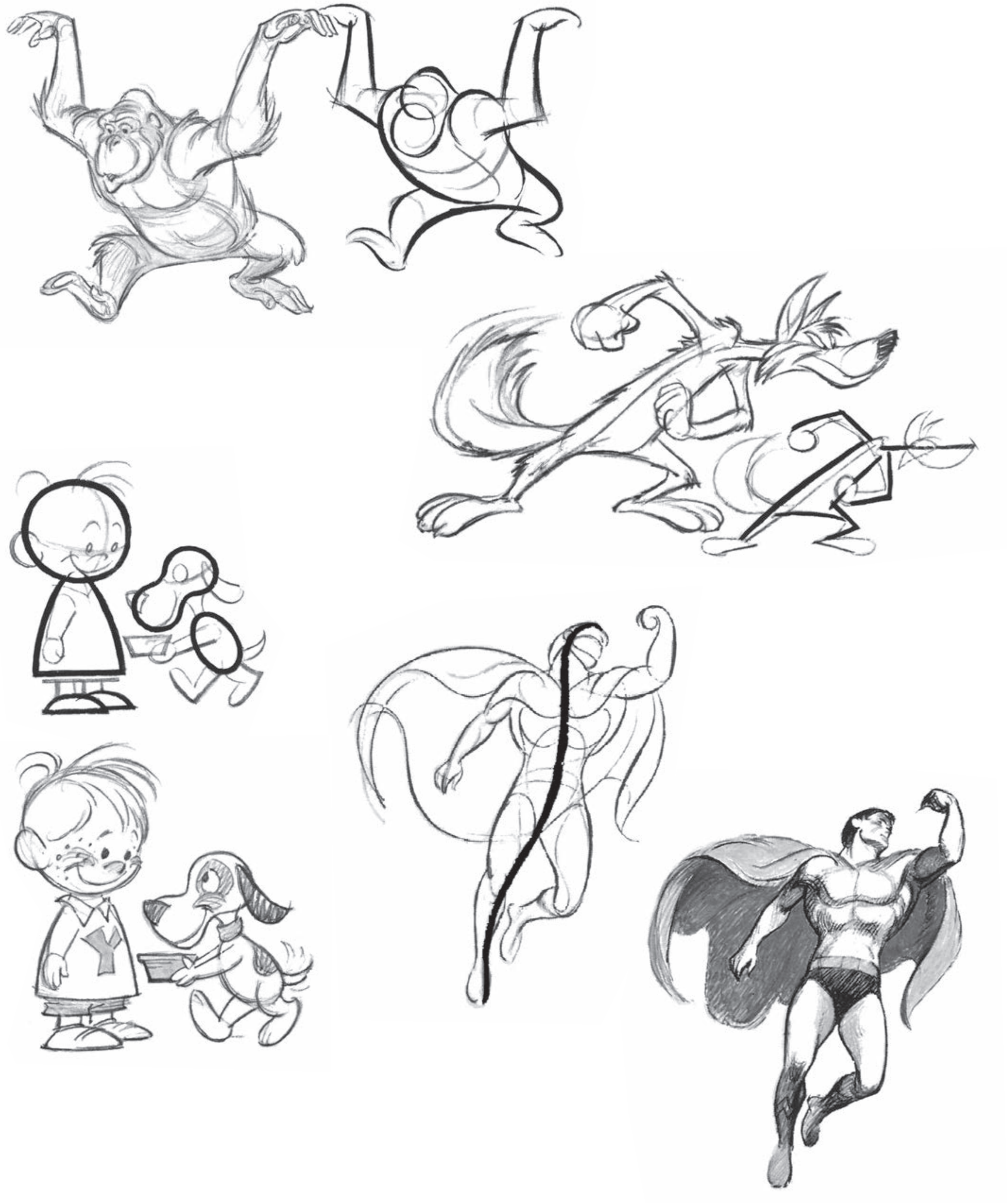


LINES THROUGHOUT THE CARTOON

Rhythm lines (right) are often broken and may jump between parallels. A series of objects or spots can create a line. Opposition of lines is important. Verticals oppose horizontals, and angles oppose arcs. The rabbit and the elf on the opposite page are examples of opposing arcs or rhythm curves. Accents, which add to the design interest and cut monotony in lines, occur at breaks or at intersections of other lines or objects.

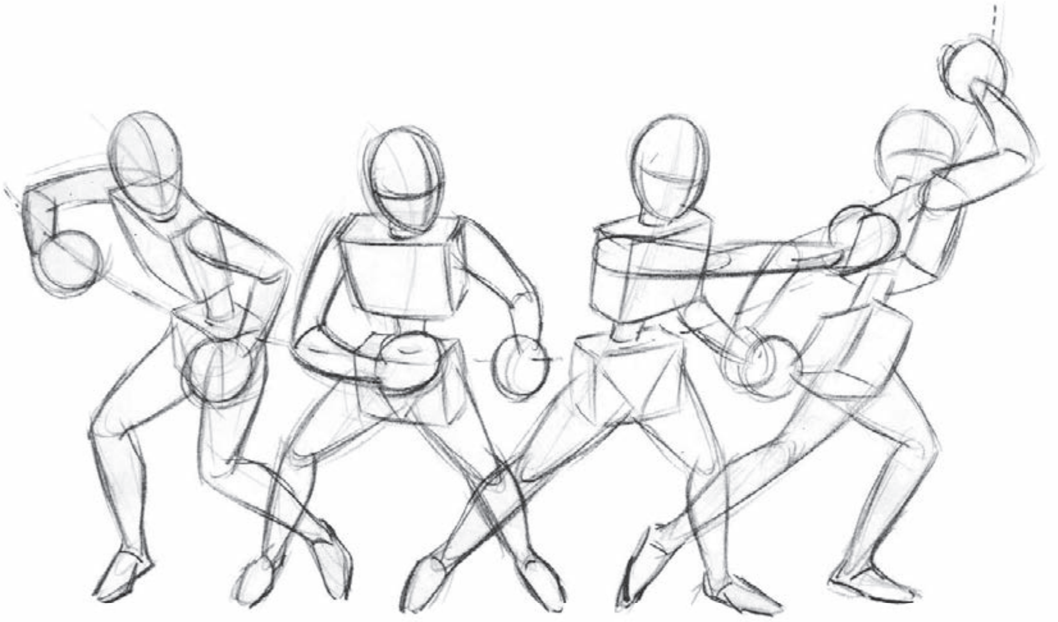


Repetition of lines in different parts of the cartoon adds contrasts to opposing lines. The line of action is the sweep of basic forms from the legs through the head. Weave these forms together to create rhythm and movement. Contrast of lines enhances the design. Verticals, diagonals, and horizontals with angles contrast and oppose rhythm curves and arcs. Geometric shapes should be in sharp contrast for design and character definition.

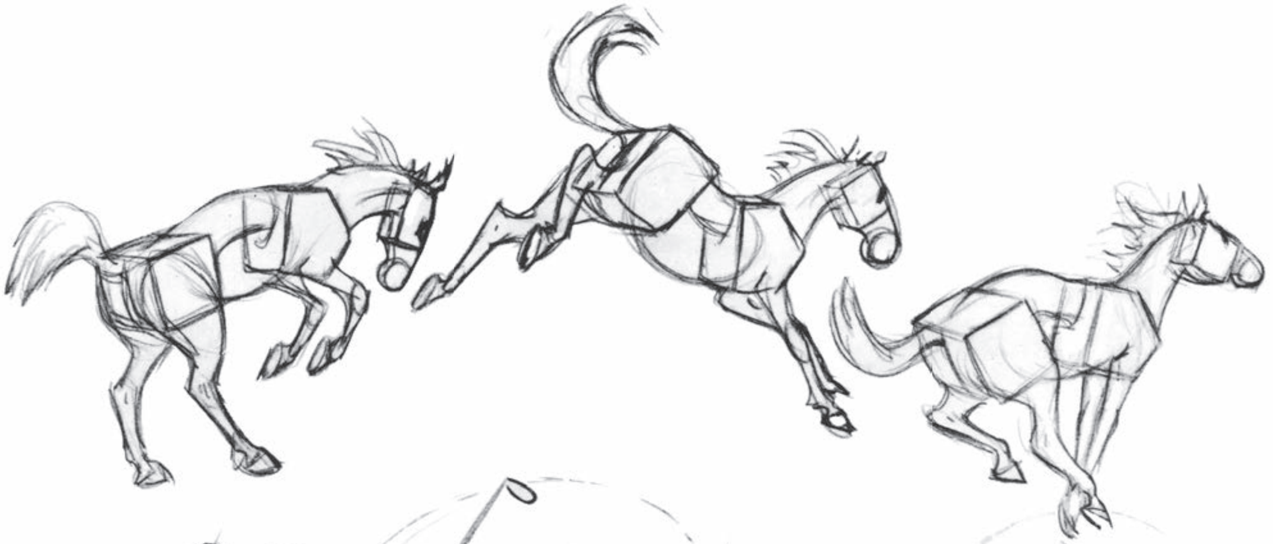


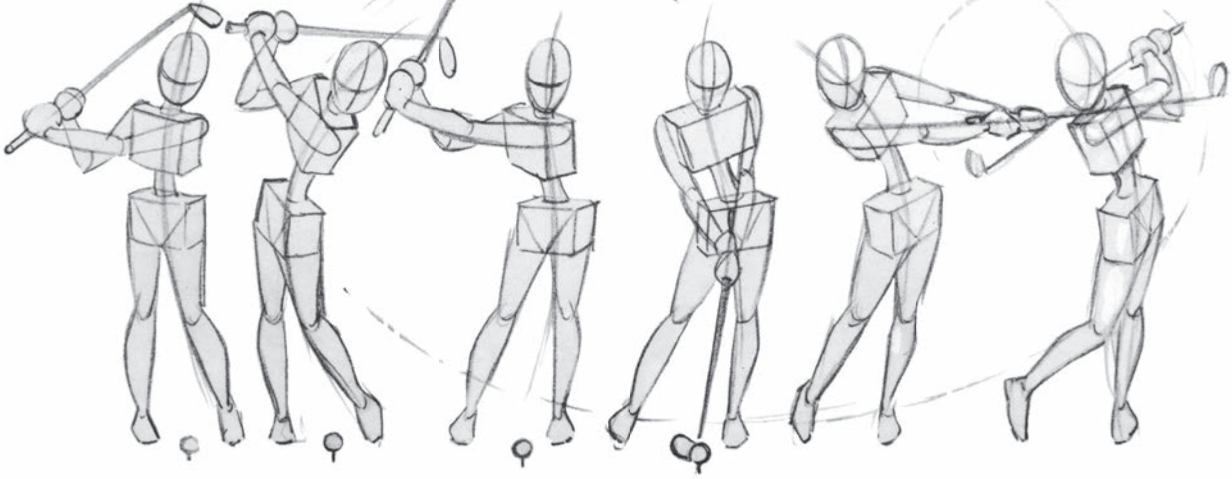
BASIC MOVEMENT

The following pages show common movement sequences in animation. Study how a bird flies, a ball bounces, and how two-legged and four-legged figures walk, run, skip, and perform other movements. Not every drawing in the sequences are shown in the book—only the key positions. The rest of the drawings are called “in-betweens.” In-between drawings are made between the key drawings to create a smooth movement of the figure. Draw enough in-betweens to make the action smooth for the specific speed of the action and the timing in filming. Then, to continue a walk, repeat the entire cycle as many times as needed.



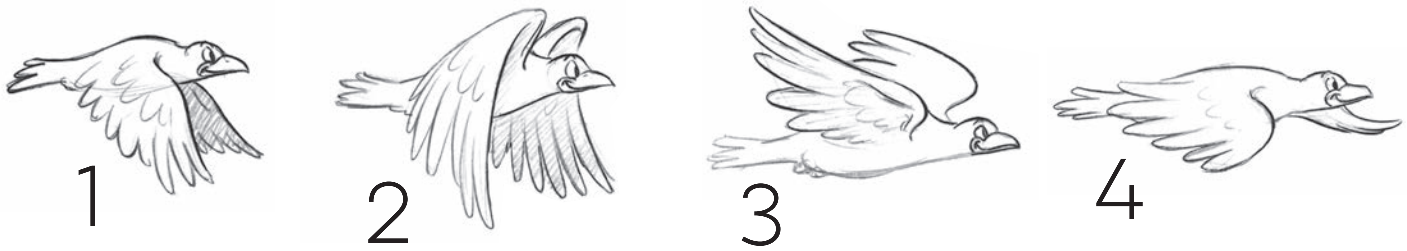
Here are some simplified figures in action to show you the twist and turn and the variation of perspective in the main body masses. Building the figure in solids makes the animation easier to “feel out.”



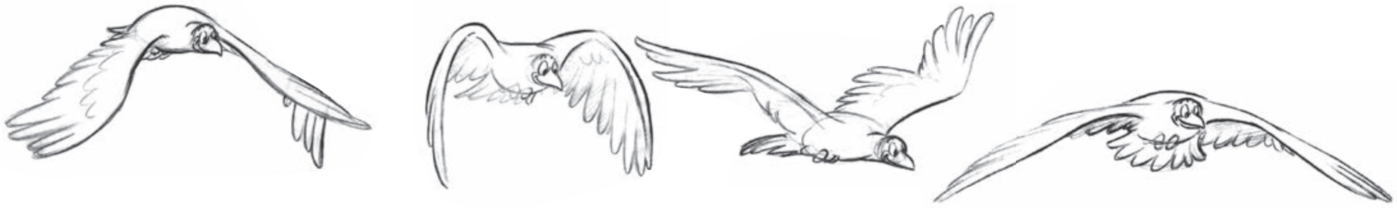


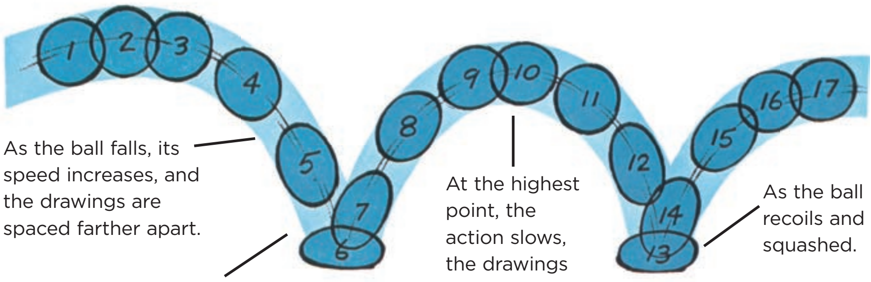
TAKING FLIGHT

The flight of birds illustrates the many forms and sizes the wings go through in a single flap. The basic "bouncing ball" action below follows a definite path of action and can be used with any object or character in a scene.



Here is a cycle of a bird flying, which is drawn in the same positions from both the front and the side views. The motion shown in drawing 4 comes after drawing 1. Drawing 1 above is in the same wing position as drawing 1 below, etc. Notice how the wings fold up as they rise in drawing 2. This part of the action is slower, so there are more in-between drawings to it. Consequently, you will see it longer. In drawing 3 above, the wings enlarge to catch more air. On 4, they quickly come down wide open (one drawing) to give the bird the push that carries it through the air.





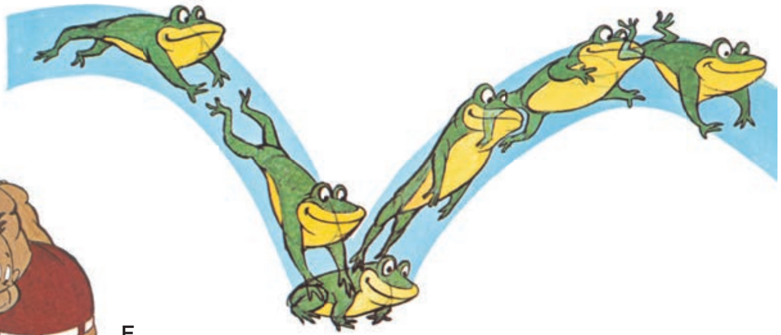
The ball follows a definite path of action. Study the spacing of the ball along this path. Notice the similarity of the ball action to the frog hop and jump below.

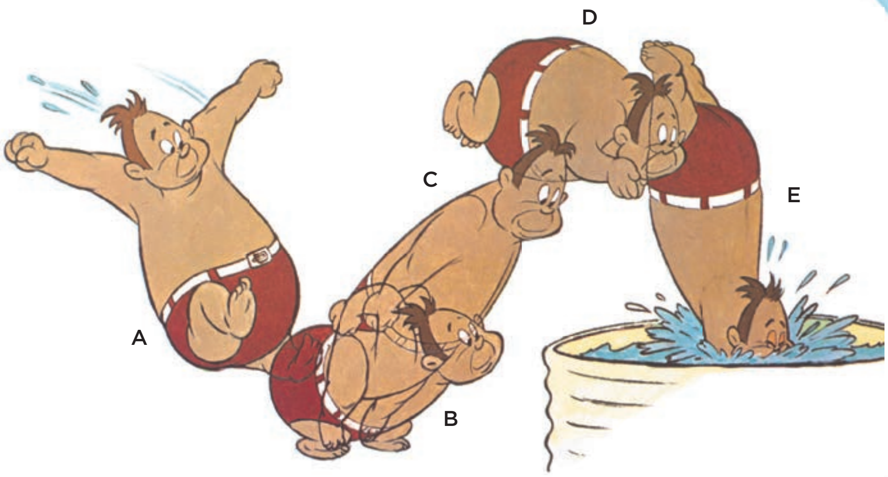
As the ball falls, its speed increases, and the drawings are spaced farther apart.

Notice how the ball "stretches" when falling and taking off on steps 5, 7, 12, and 14.

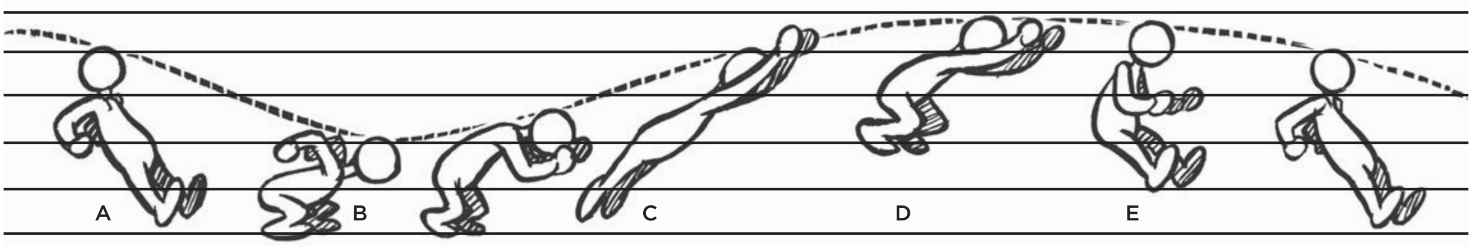
At the highest point, the action slows, the drawings are spaced closer, and the ball resumes its natural shape.

As the ball hits, it recoils and becomes squashed.





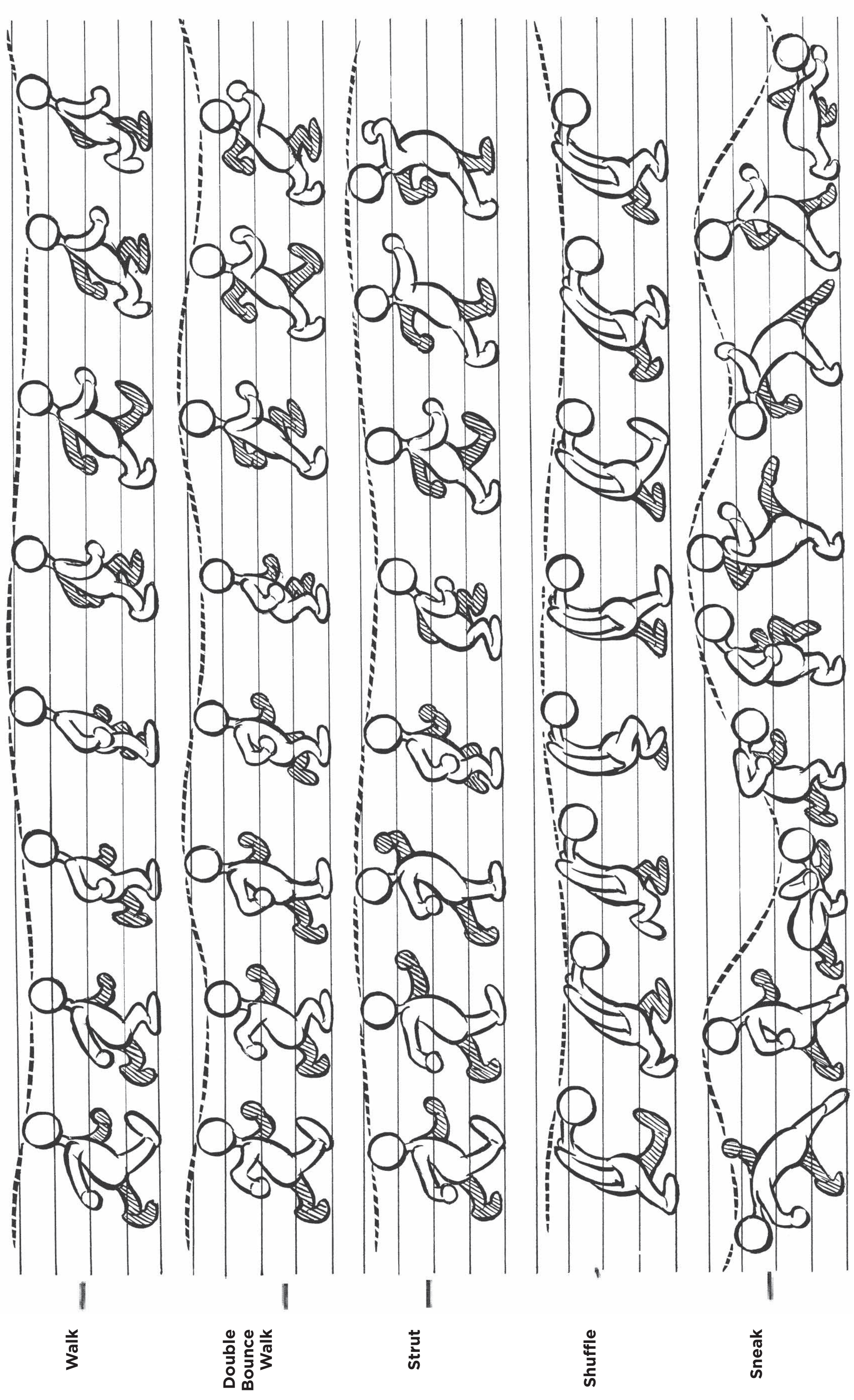
Notice that A, C, and E at left are like 5, 7, 12, and 14 of the ball bounce, when the character stretches. B is like the recoil on 6 and 13, and D is like the normal 2, 10, and 17.



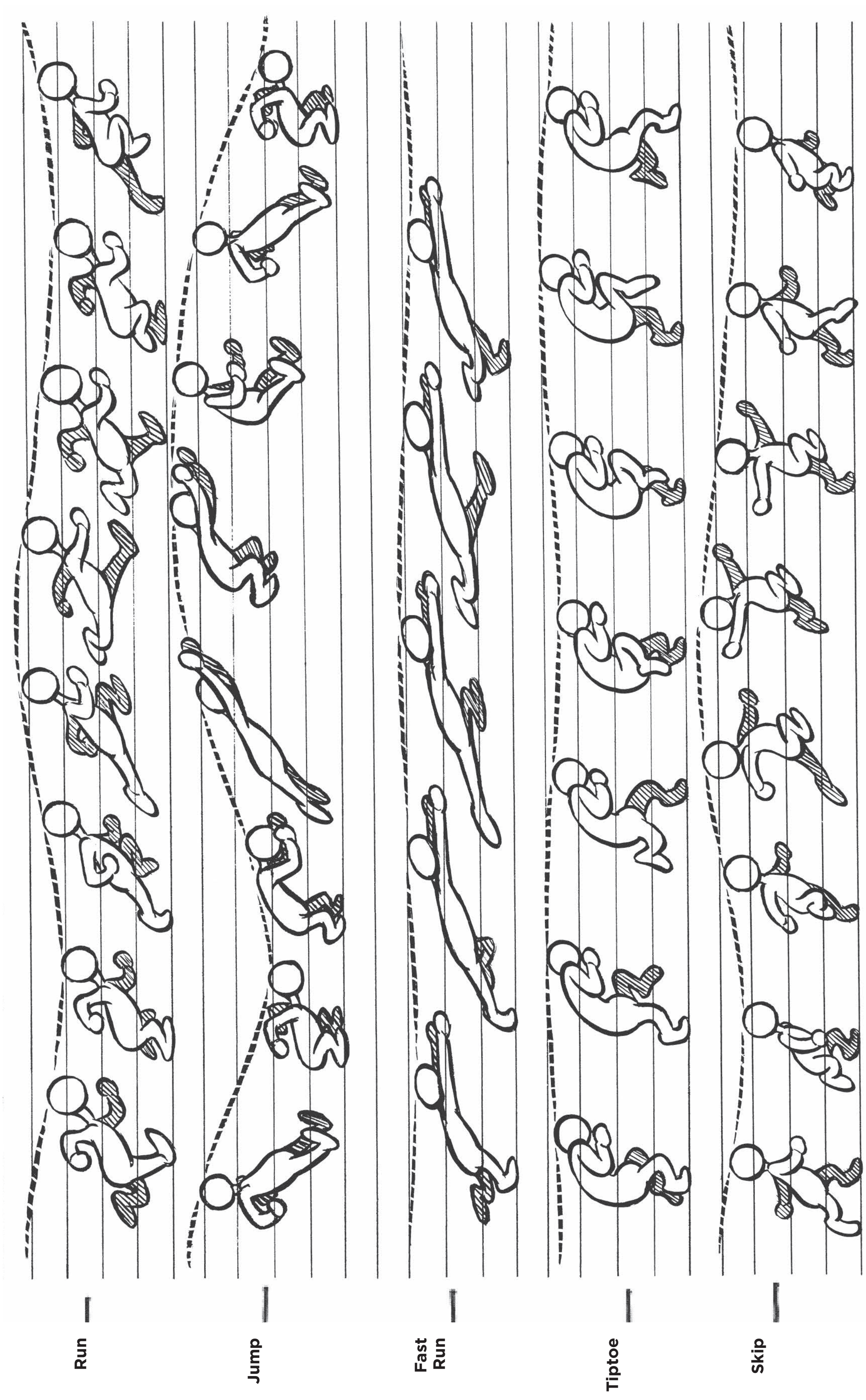
Here the arms are flung up suddenly to create momentum helping the jump.

MOVEMENT OF THE TWO-LEGGED FIGURE

A complete cycle for a two-legged walk is two steps. Drawings are made of the key positions of the stepping action until the next drawing would be a repeat of the first. The drawings can be used over and over again to make the character walk as far or as long as desired.

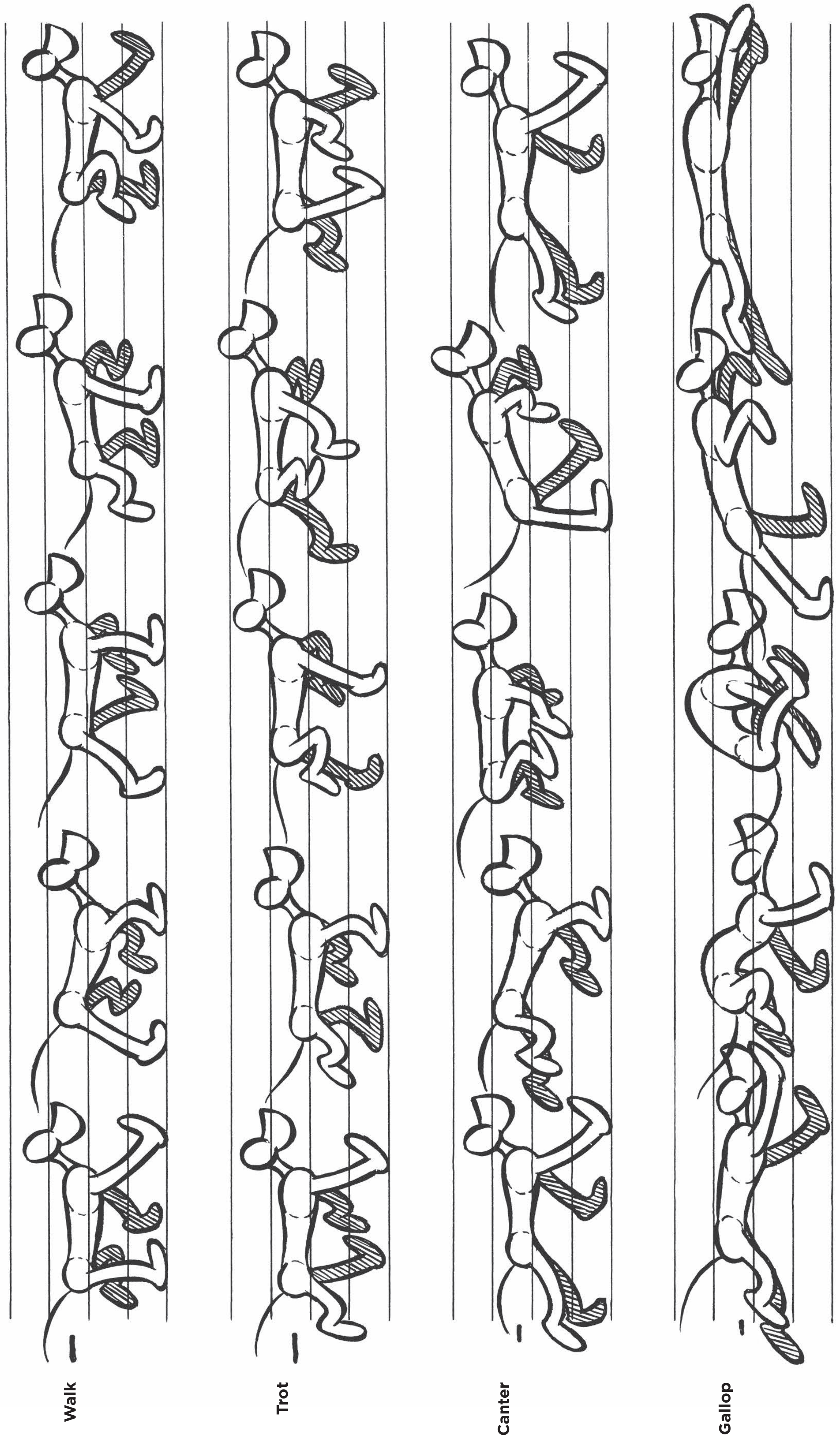

Walk
Double Bounce Walk
Strut
Shuffle
Sneak

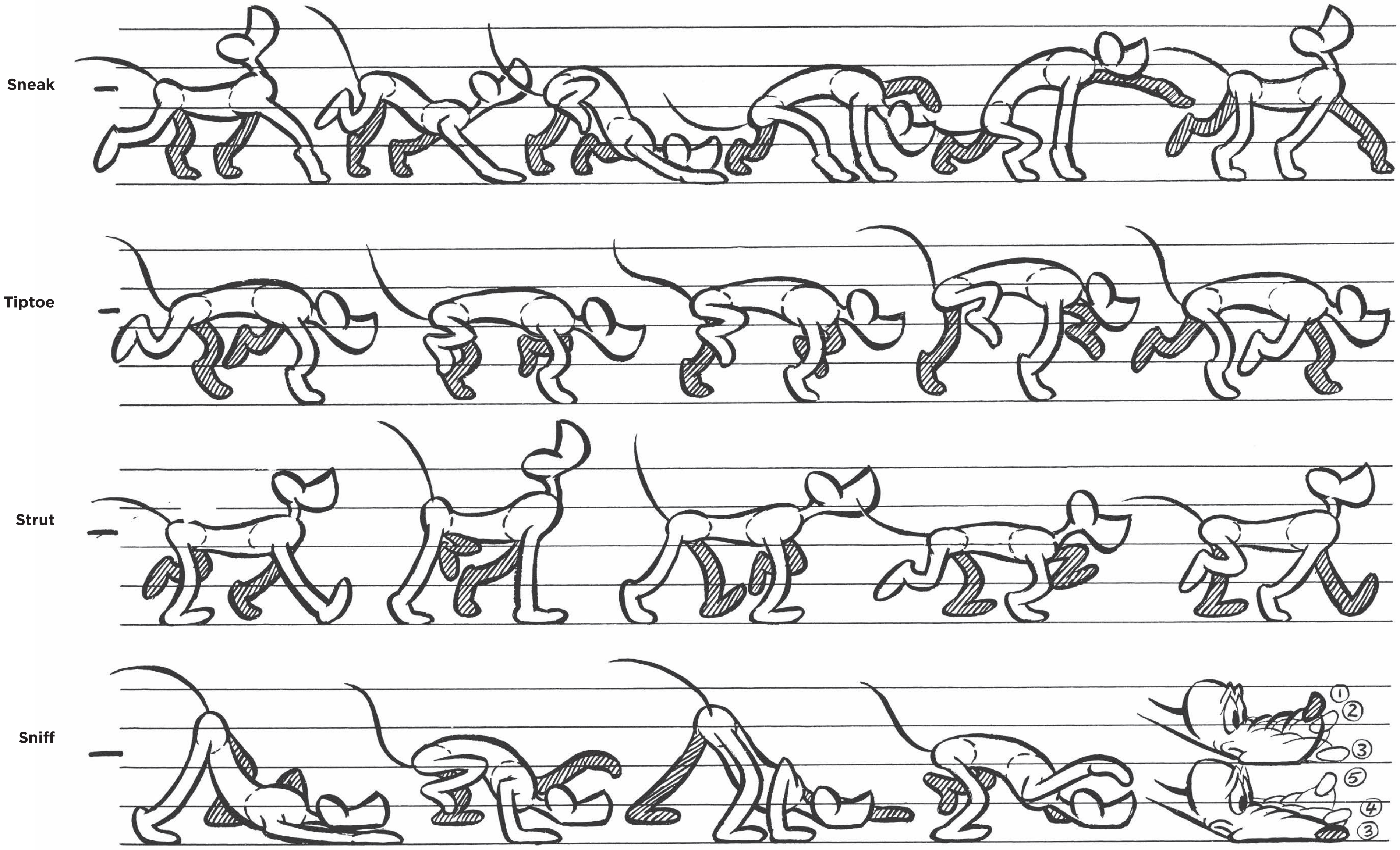
For a half-cycle, half of the action (one step) can be drawn, and then the hands, arms, legs, and feet can be switched from side to side, essentially creating a complete action without redrawing all of the body and head positions.


Run
Jump
Fast Run
Tiptoe
Skip

MOVEMENTS OF THE FOUR-LEGGED FIGURE

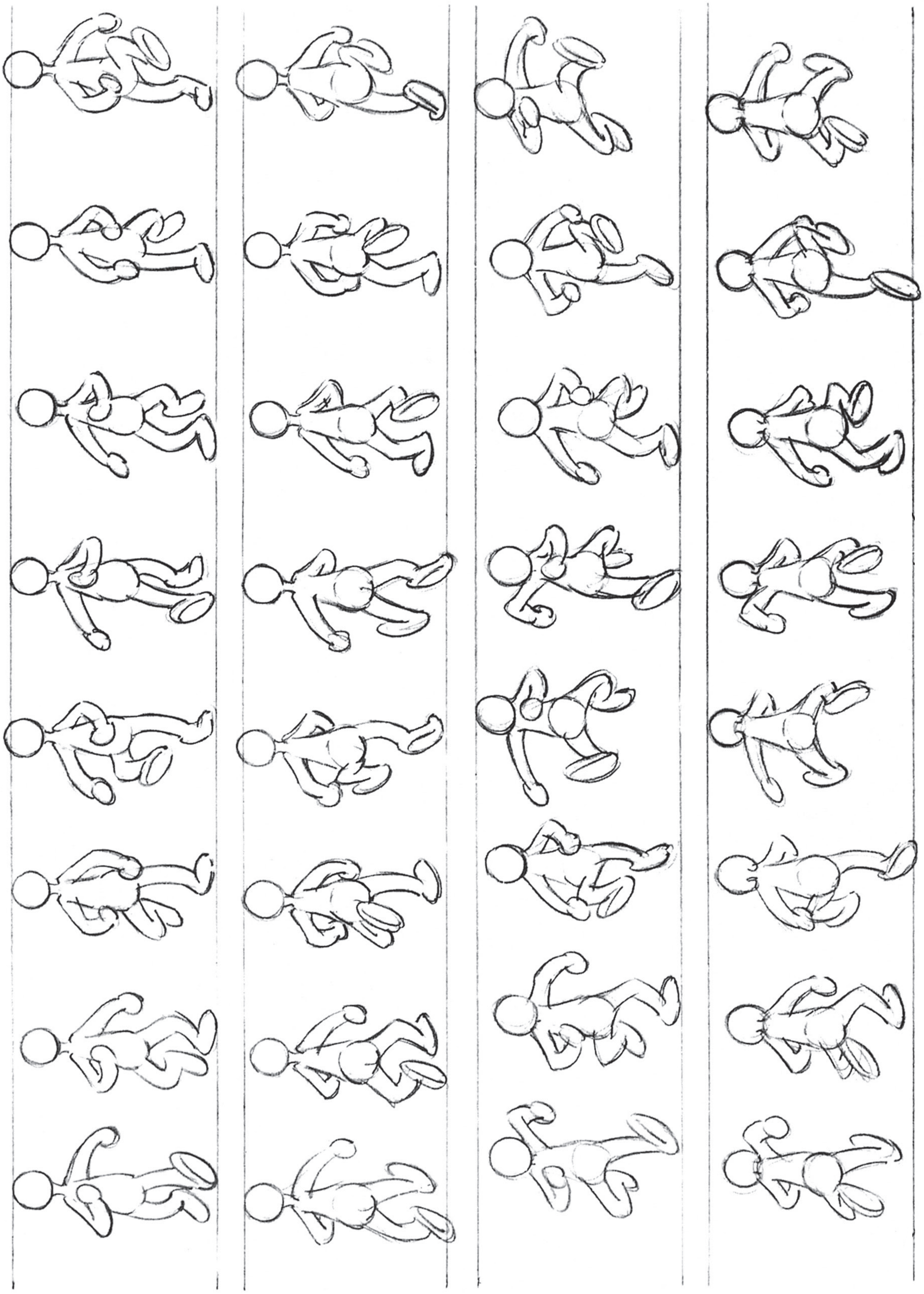
Here is a comparison of the main cycles of four-legged movement. The walk, trot, sneak, strut, and tiptoe are half-cycles. The gallop, canter, and sniff are complete cycles.

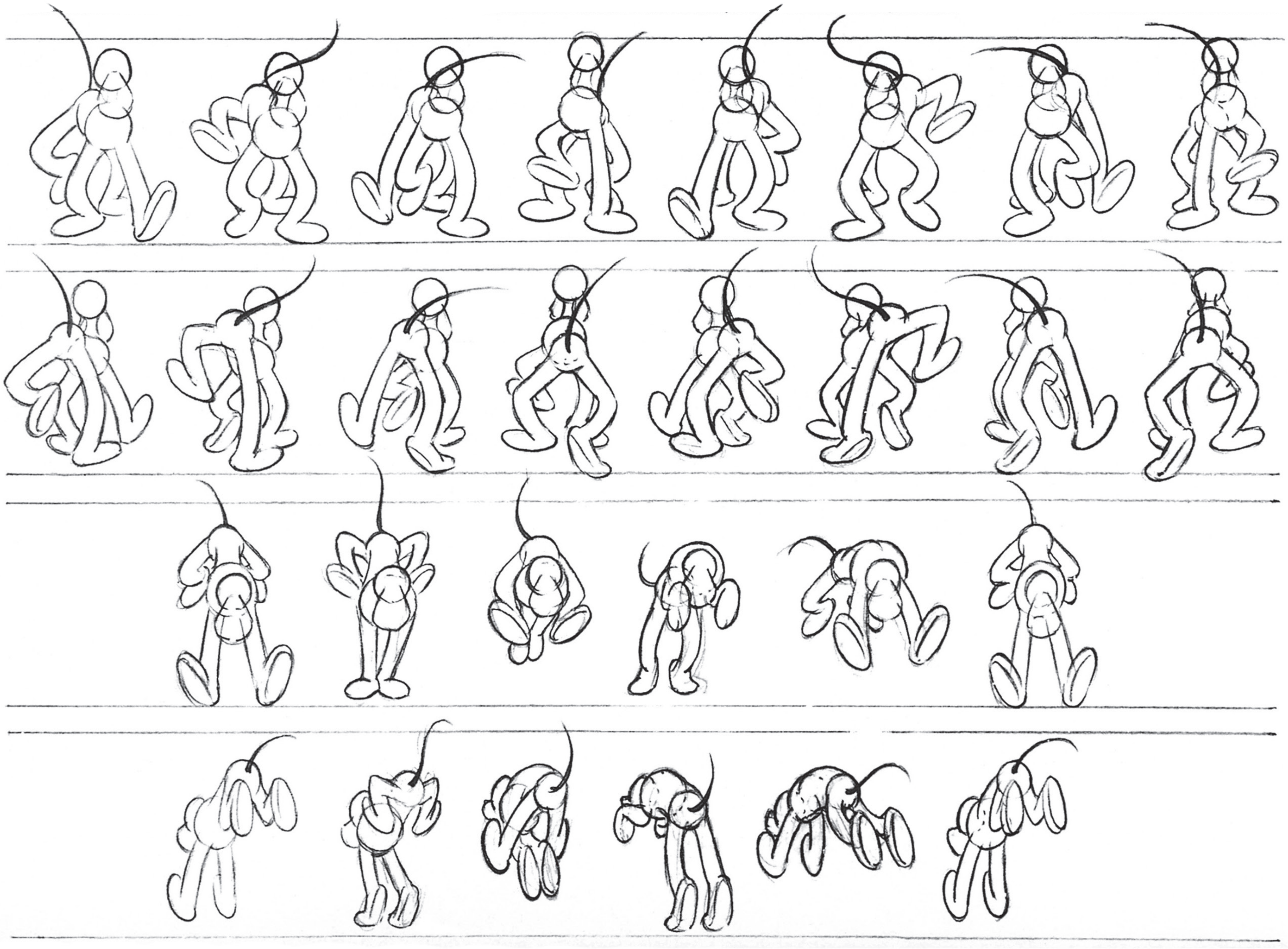

Walk
Trot
Canter
Gallop


Sneak
Tiptoe
Strut
Sniff
①
②
③
⑤
④
③

FRONT & REAR VIEWS OF MOVEMENTS

All actions take on different characteristics. Here is a walk and a run, each from the front and rear views. Study the actions; then use them as a guide to animate some of the characters shown in this book.

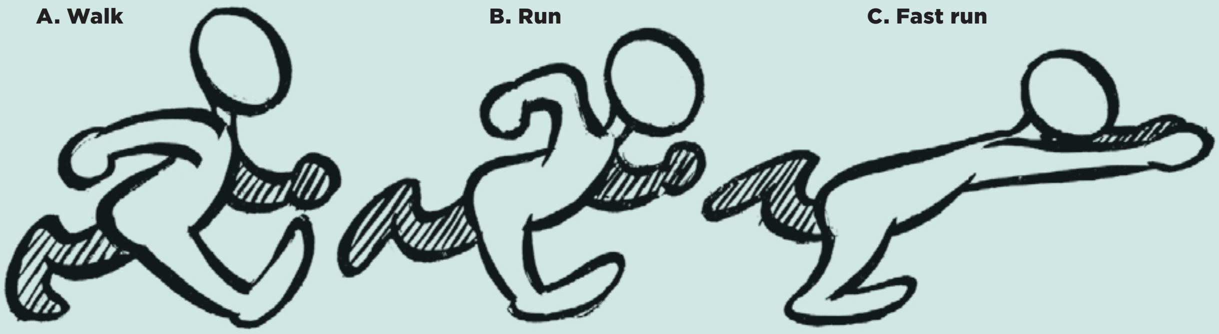




THE DIFFERENCES BETWEEN WALK & RUN

Compare the action of the walk with the run. More than any other single factor, the position of the back foot determines the speed. Note the differences between the shaded back foot on drawings A, B, and C below. There are also differences in the stretch of the front foot, the lean of the body, and the arm swings—or arm reach, in the case of the fast run.

Determining Speed with Contact Drawings



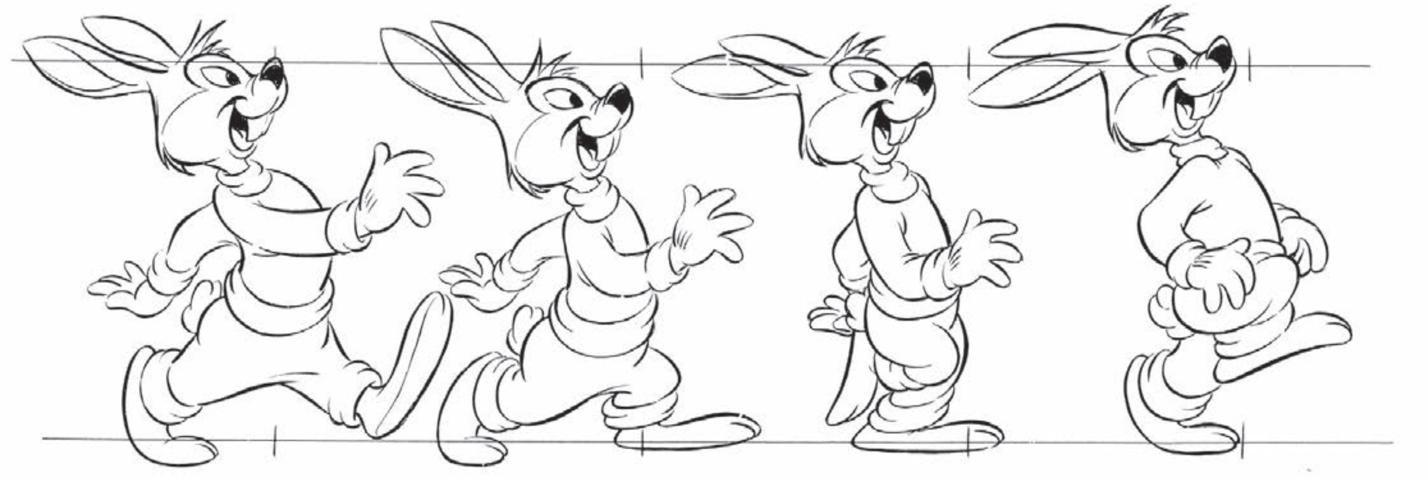
A. Walk

B. Run

C. Fast run

The figures above are the contact drawings from (a) the walk, (b) the run, and (c) the fast run. The contact drawing is the pose in which the foot, after being lifted, strikes the ground. When laying out a run or walk for animation, these contact drawings are usually determined first. They establish the speed and the size of the character. The rest of the action is built around them.

The Walk

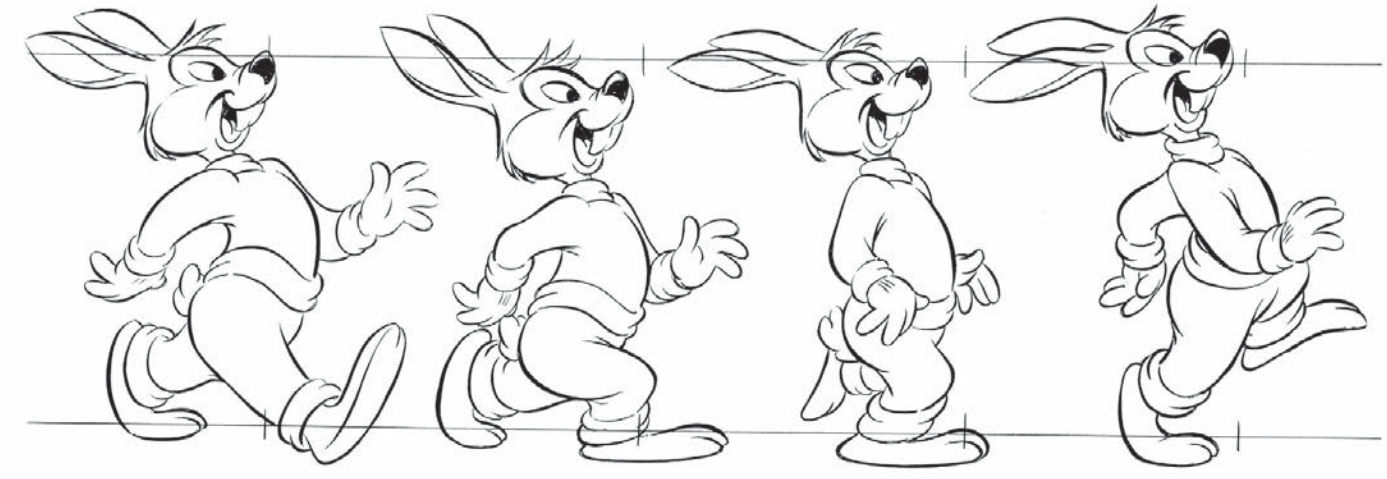


1. Left foot contacts ground.

2. Sinks into recoil position.

3. Right foot lifts, starts coming through for step.

4. High point in step, right foot raised.



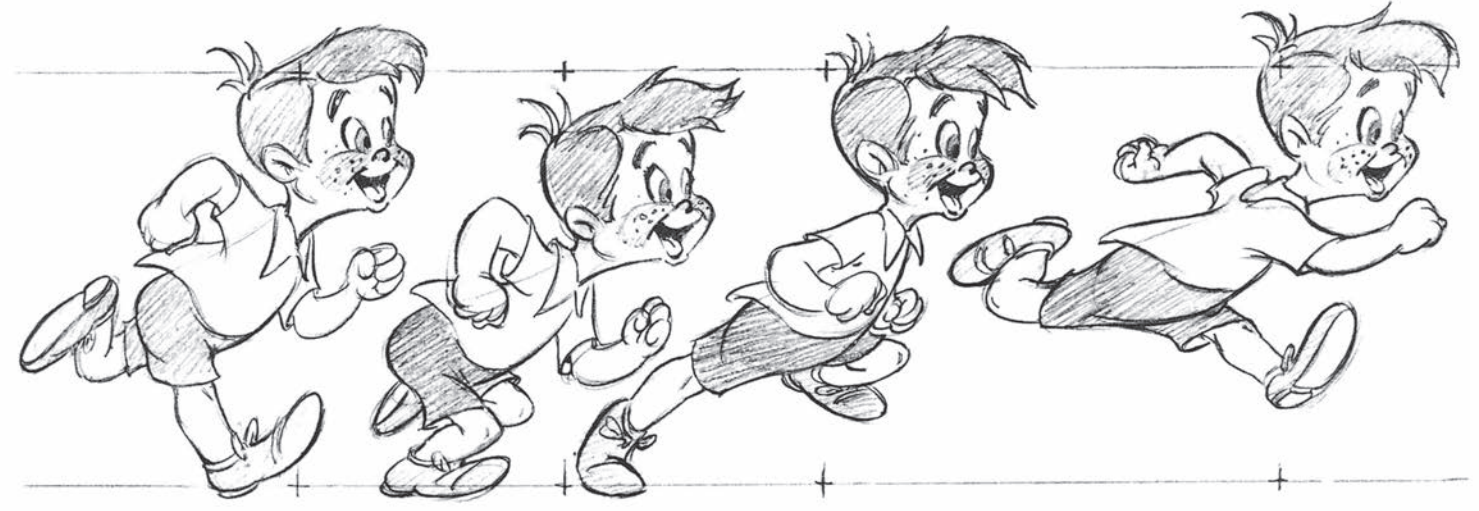
5. Right leg stiffens into contact position.

6. Recoil position: legs bend.

7. Rabbit rises as left leg lifts.

8. High position (step 1 follows this).

The Run

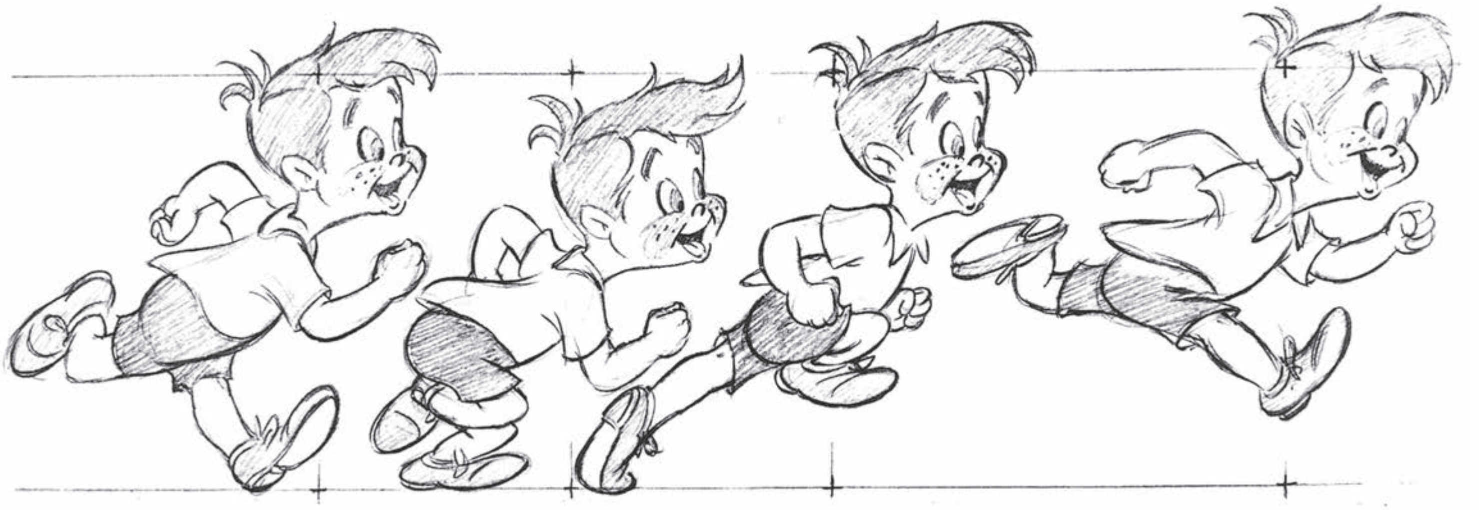


1. Right foot down in contact position.

2. Right foot takes weight of body.

3. Right foot pushes body off.

4. Body at highest point in run.



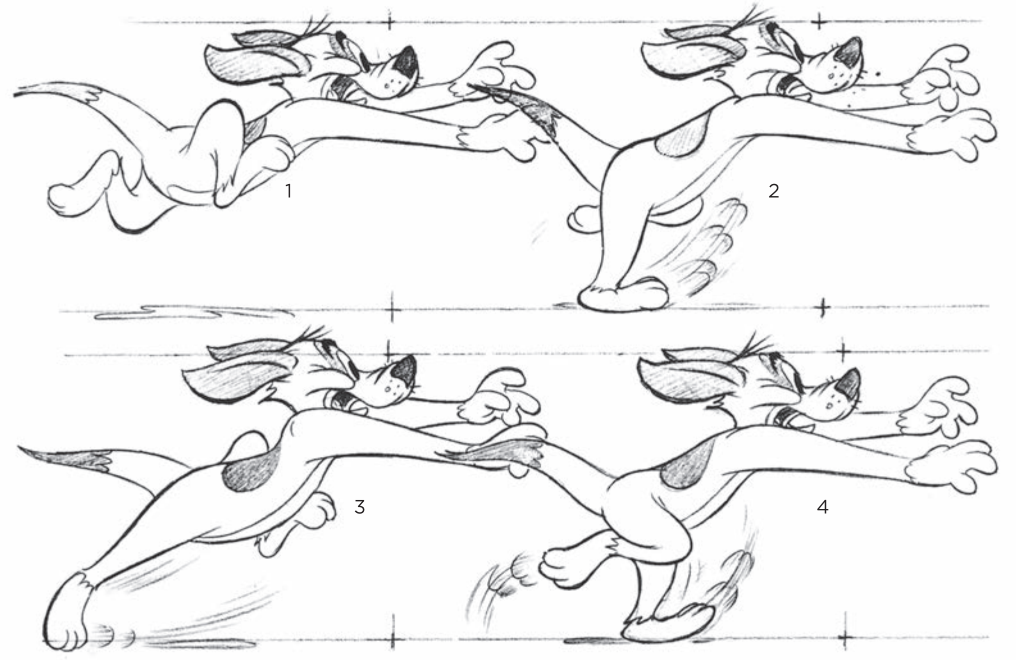
5. Left foot reaches for ground.

6. Recoil—right foot coming through.

7. Left foot stretches for take-off.

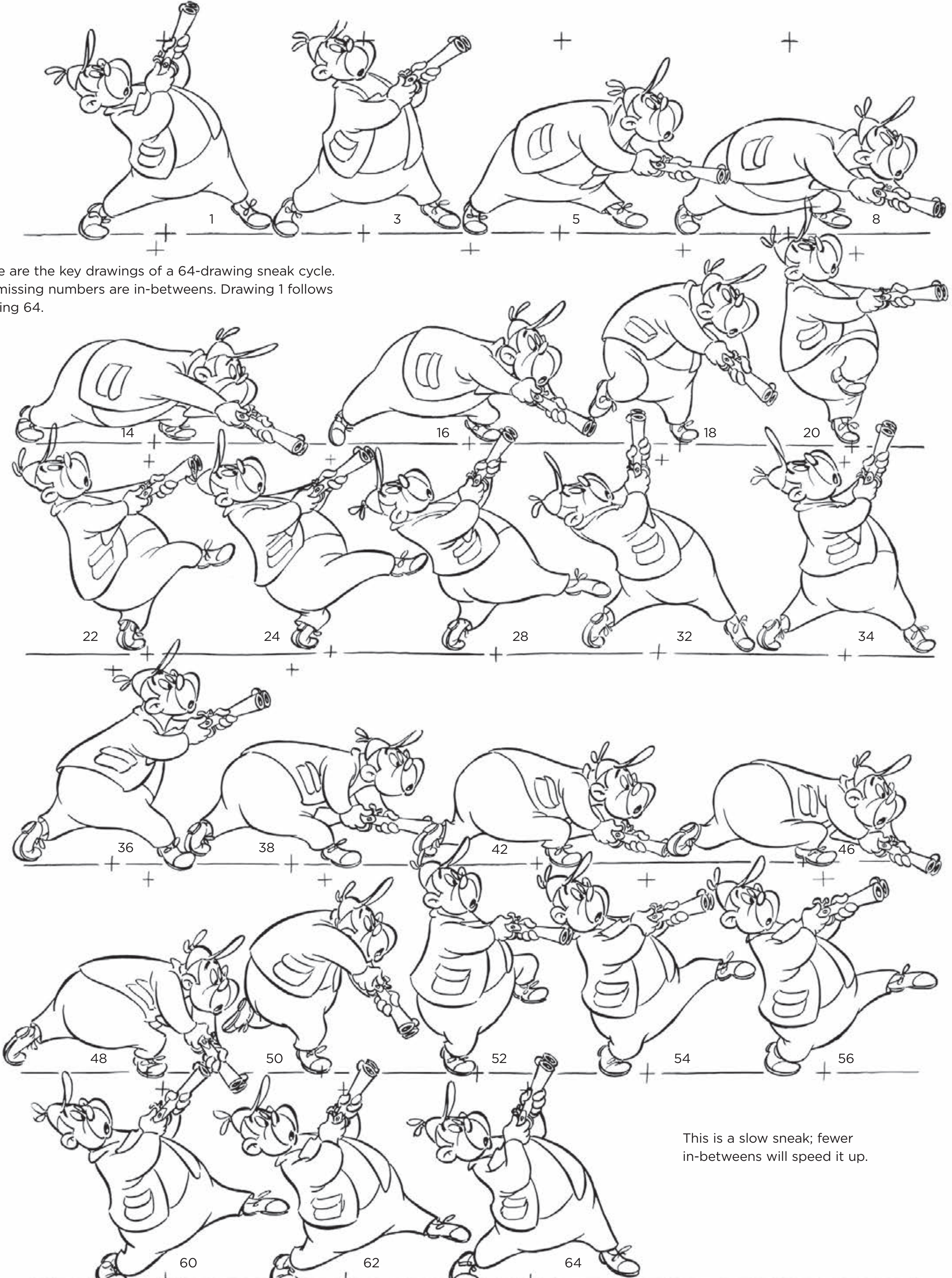
8. Arms and legs stretch (step 1 follows this).

The Fast Run When animating the fast run, try not to have two action drawings in the same silhouette position within one or two frames. In the walk and run, there are enough drawings between similar silhouette positions—steps 1 and 5 above—so there's no problem. But that's not the case with this 4-drawing cycle. Notice that all foot action drawings are varied: step 3 is different than step 1, and step 2 is different than step 4.



THE SNEAK

The sneak is a walk in which the recoil (after the foot contacts the ground) is exaggerated and the speed of the foot coming down into the contact position is slowed. This creates the illusion of stealth—that the feet are carefully placed to evade noise and detection.

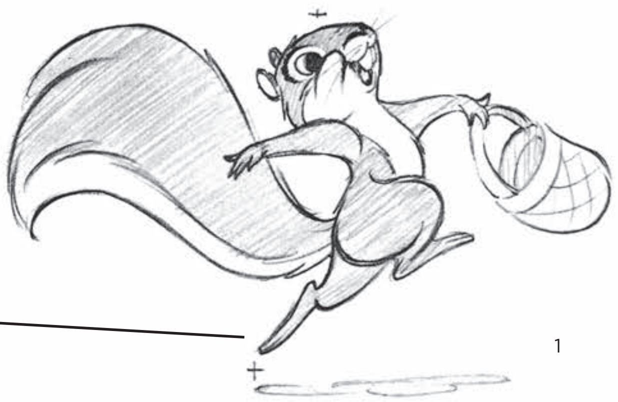

1
3
5
8
14
16
18
20
22
24
28
32
34
36
38
42
46
48
50
52
54
56
60
62
64

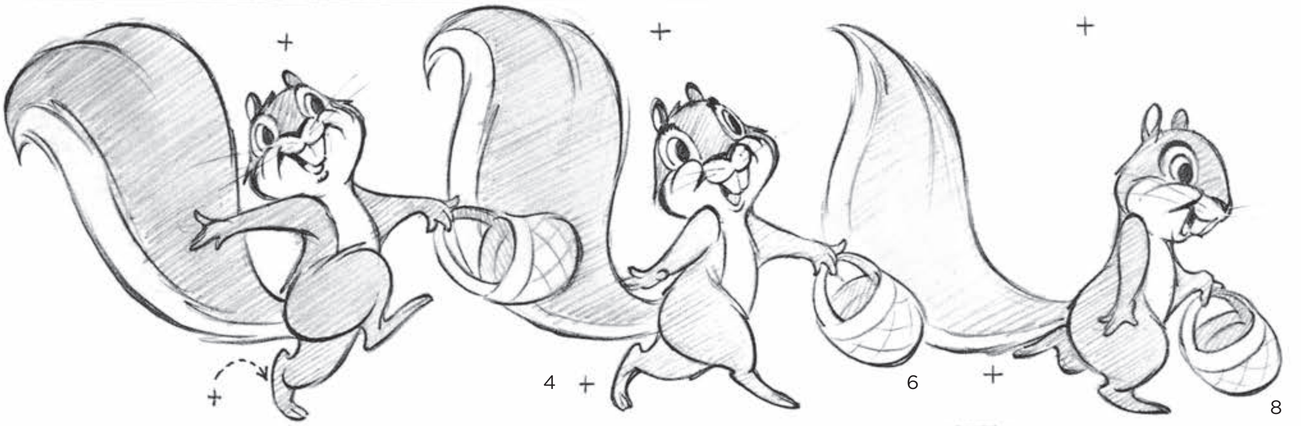
These are the key drawings of a 64-drawing sneak cycle. The missing numbers are in-betweens. Drawing 1 follows drawing 64.

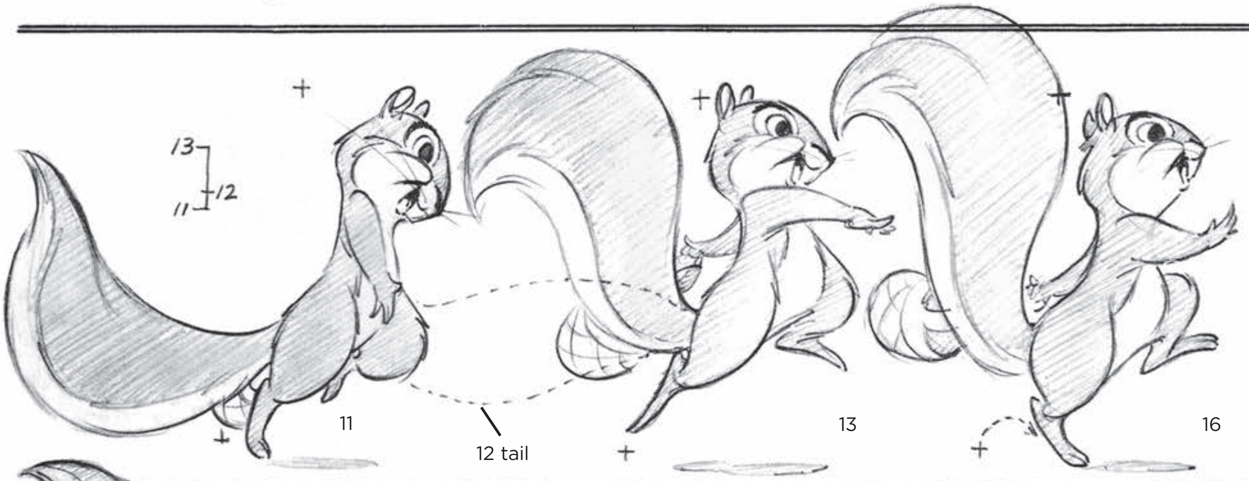
This is a slow sneak; fewer in-betweens will speed it up.

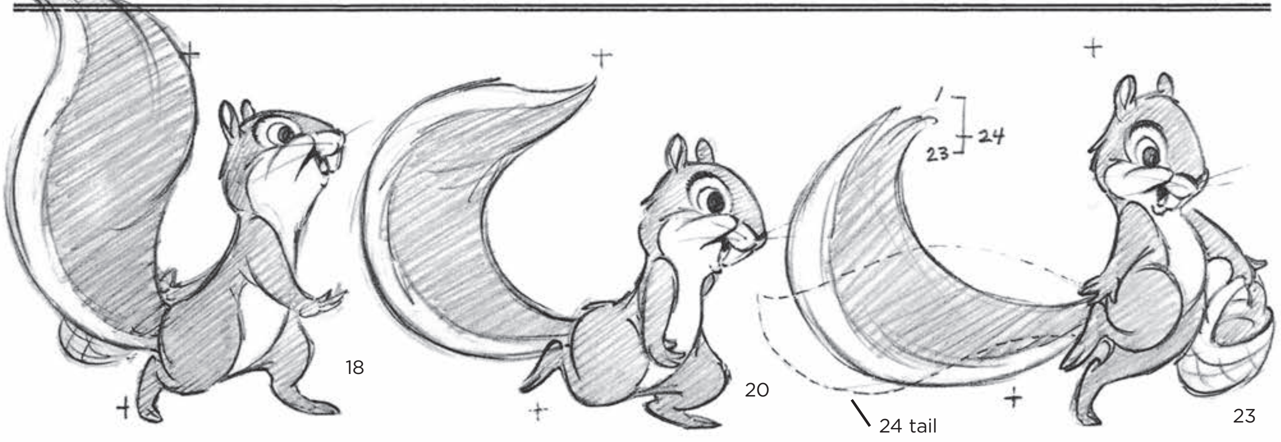
THE SKIP

Below shows the extremes of a 24-drawing skip cycle. The missing drawings are "in-betweens," or drawings spaced evenly between the extremes. The cross marks above and below each drawing are registration marks. Trace each drawing on a separate sheet of paper—making sure the crosses overlap—then flip the drawings and study the action.


The body and the hands in the skip are the same as in the run. The difference is in the action of the foot, which pushes the body off the ground and then raises in an arc, contacting the ground toe first.

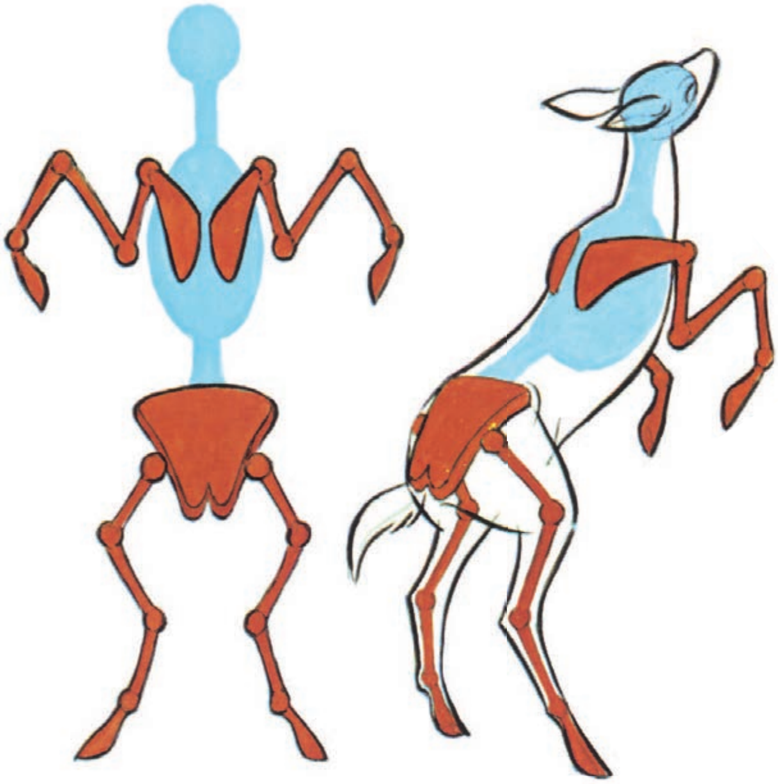




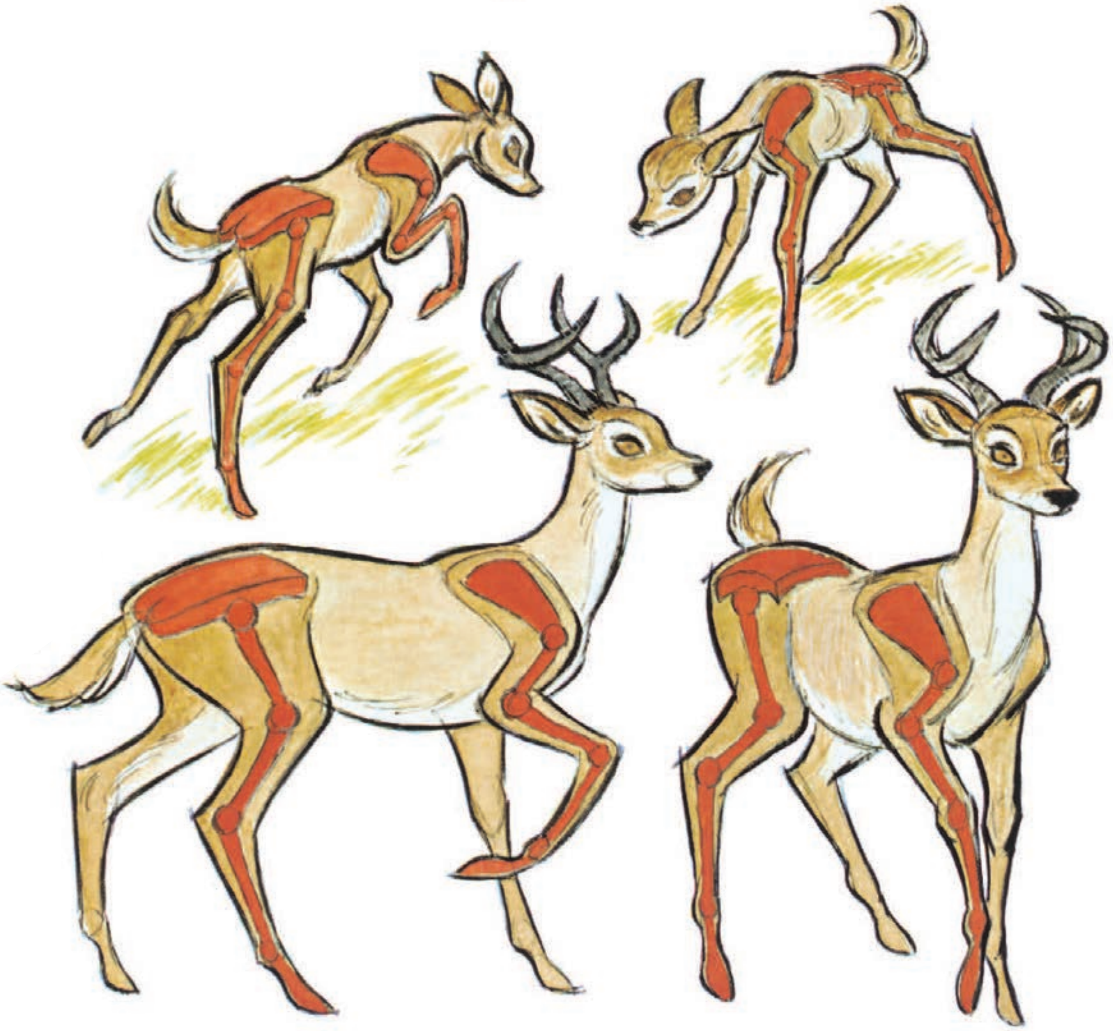


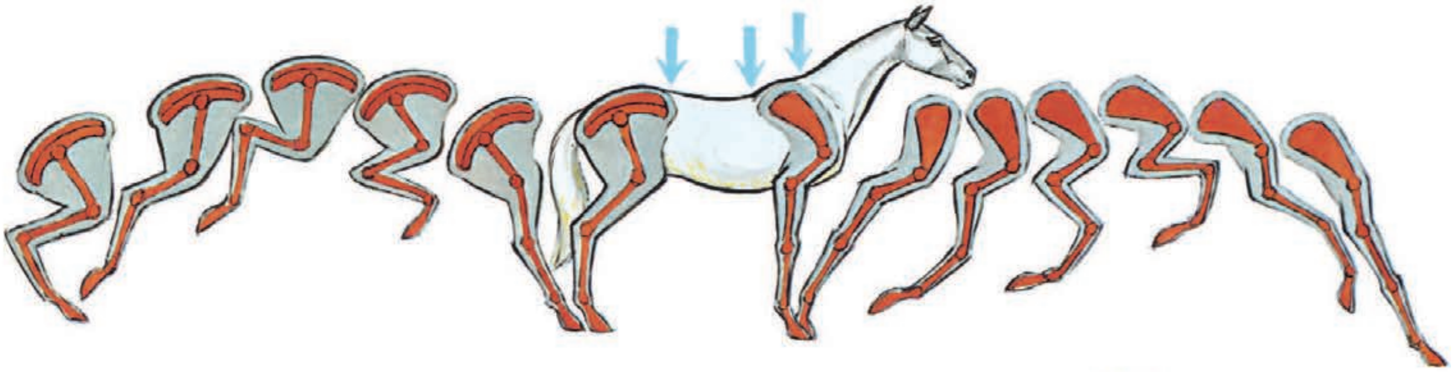
FOUR-LEGGED CONSTRUCTION & MOVEMENT

When animating an animal, use a simplified skeleton to divide its body into three sections: the forequarters, the belly, and the rear quarters. The joints of the shoulder blades and the hip forms need to be defined or at least suggested in your drawings. After locating these pivot points, proceed with your drawing. Make the legs irregular—not too parallel.

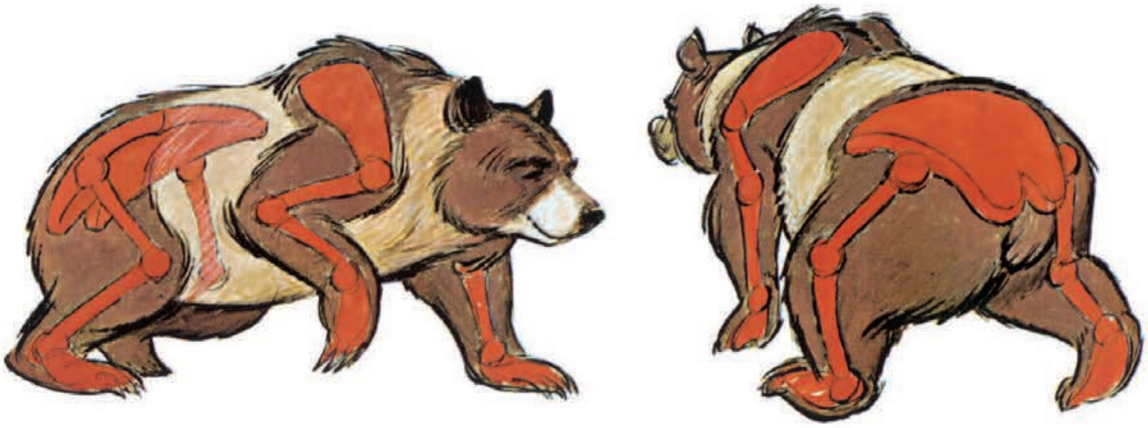


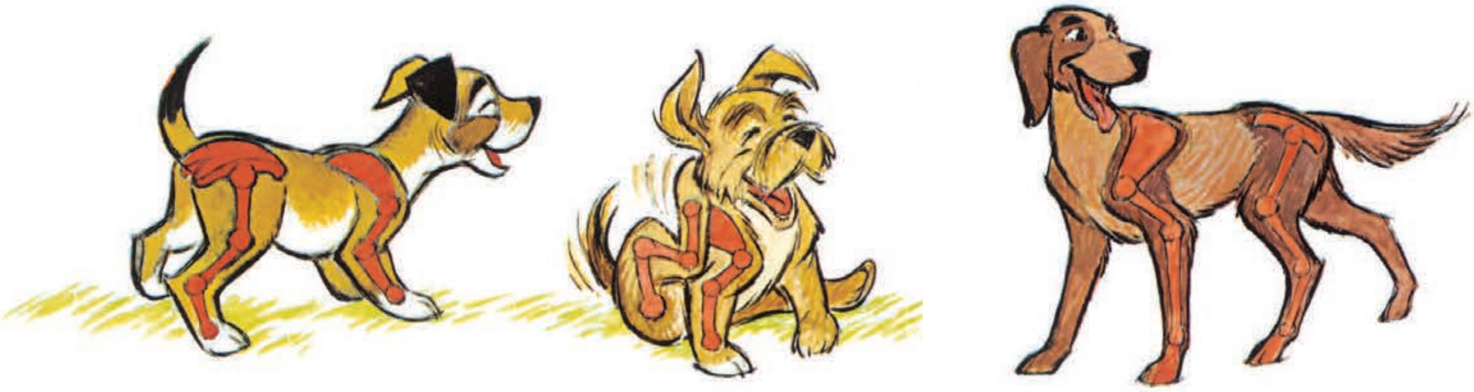
Dogs and deer run with a rotary gallop in which the opposite front and back legs lead; cats, horses, and most other animals run with a transverse gallop in which the same front and back legs lead. In any run, either the left or the right front leg can lead, so there are two versions of every animal run in this book—simply reverse the lead leg.

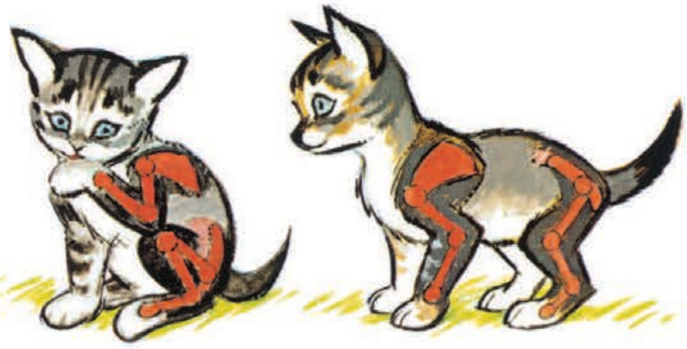


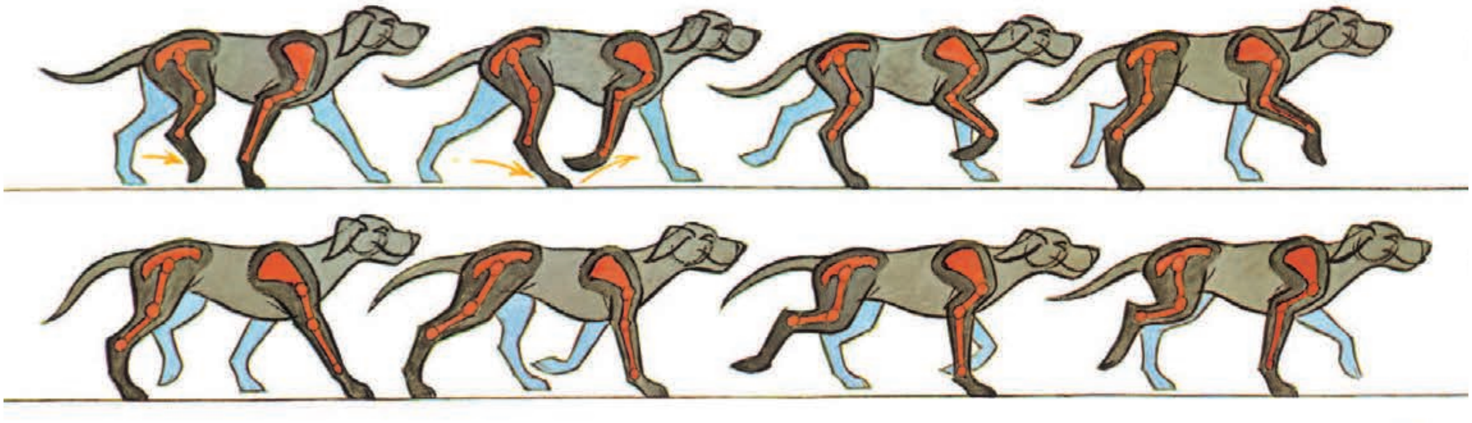


The legs fold up or stretch out with the body based on the action of the pivot points in their paths of action. Characters with these anatomical elements seem more realistic.

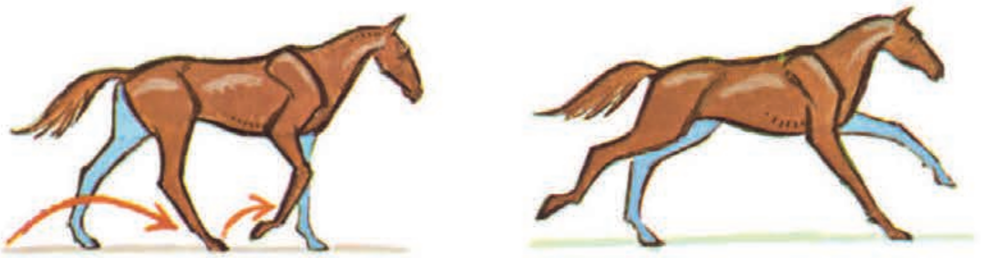


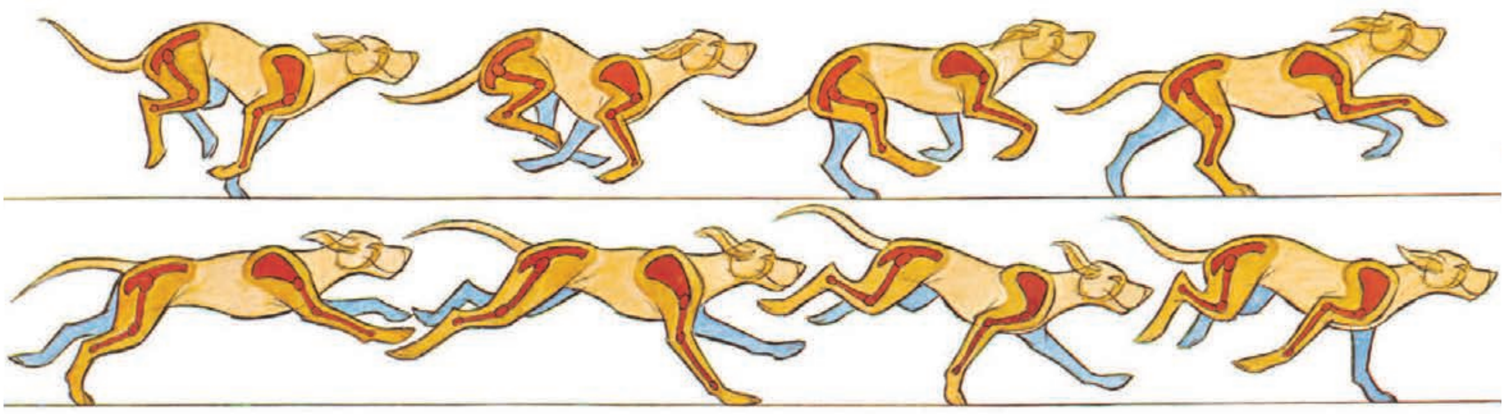


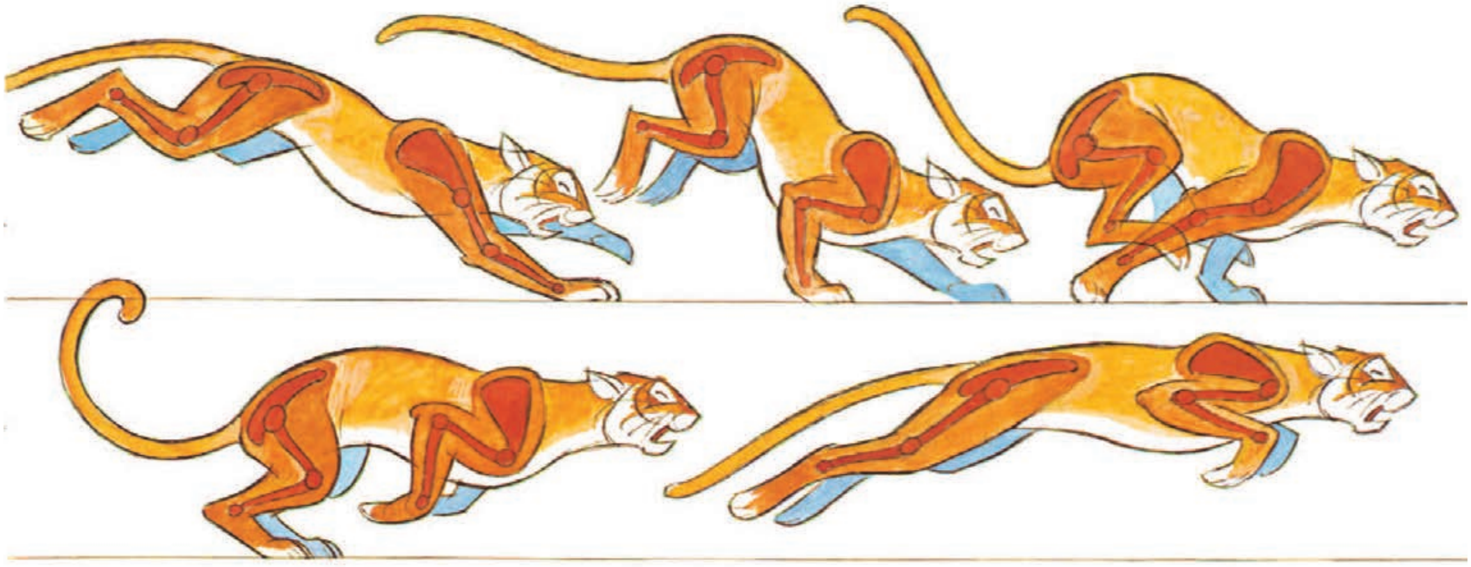


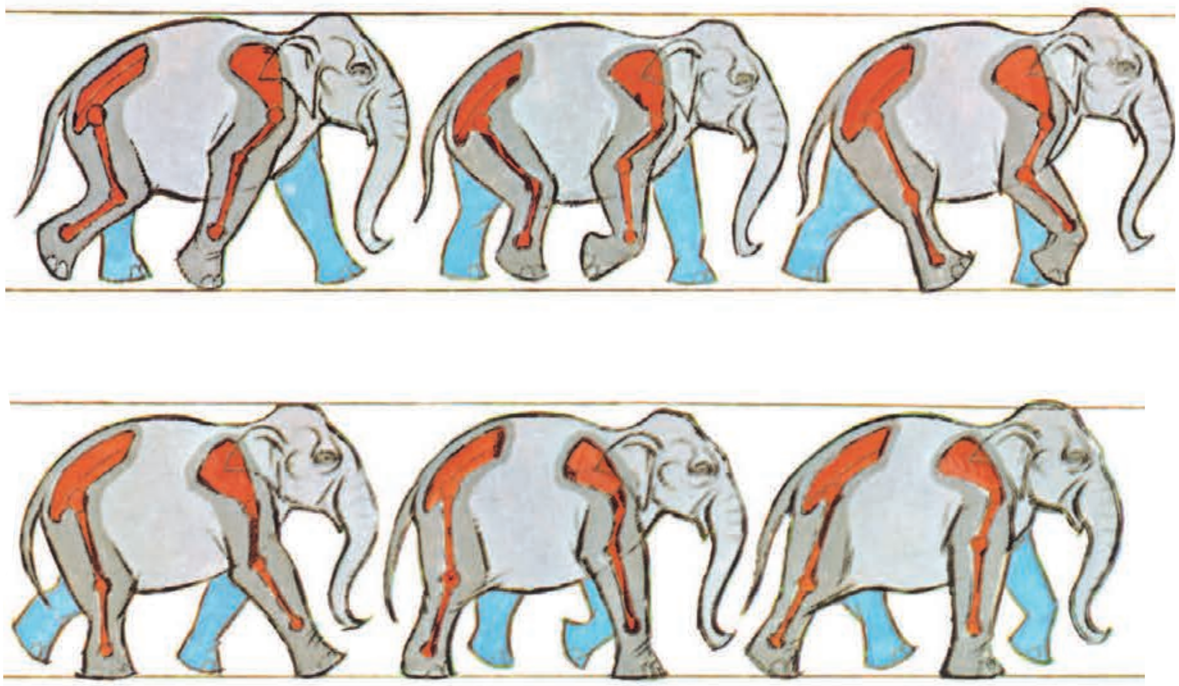


A walk cycle is two steps. In animal walks, the back legs are usually 1/2 step ahead of the front legs (as with the horse below). Above, the dog's back feet are 3/4 step ahead, but they could be 1/2 step ahead.

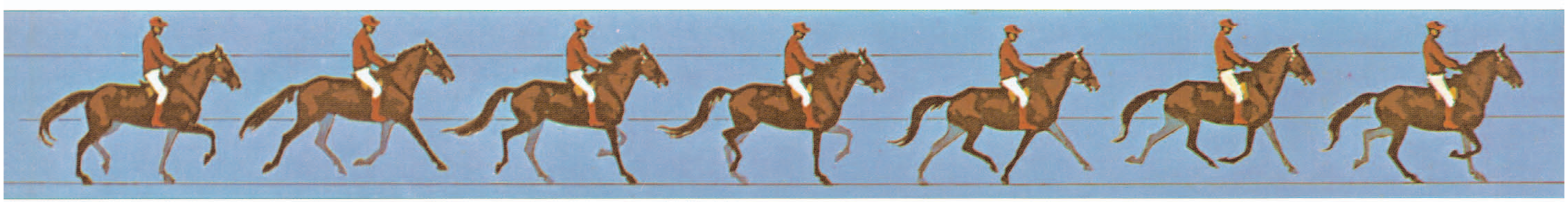




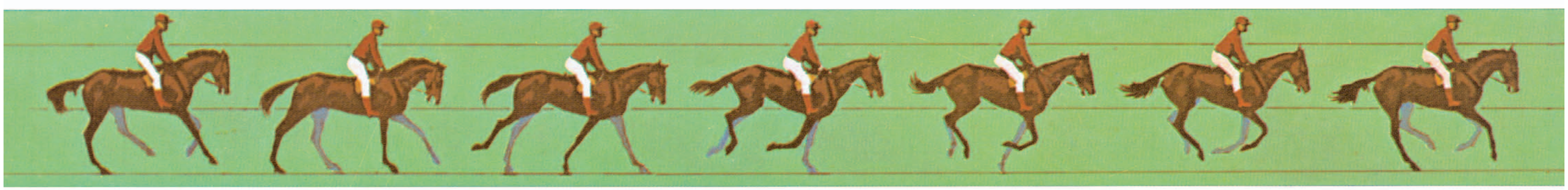




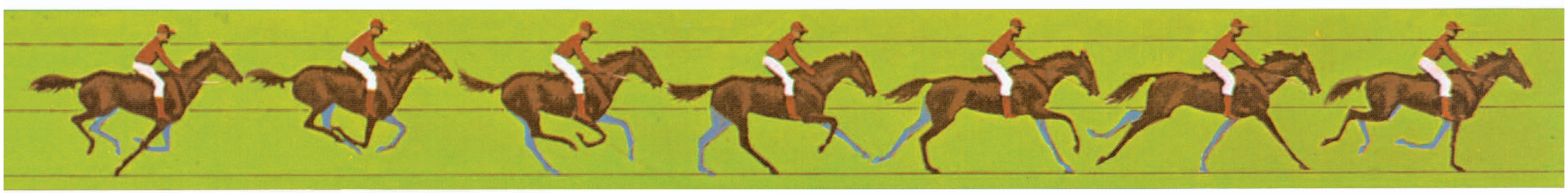
The elephant's back feet are 1/3 step ahead in the walk and 1/2 step ahead in the amble-walk, which is their fastest pace (elephants can't run). When animating a walk, think of the back foot coming forward and releasing the front foot on the same side to rise. The back foot never releases the opposite front foot to rise, which is a common mistake with animators and illustrators. When the animal backs up, it is the same, except in reverse.



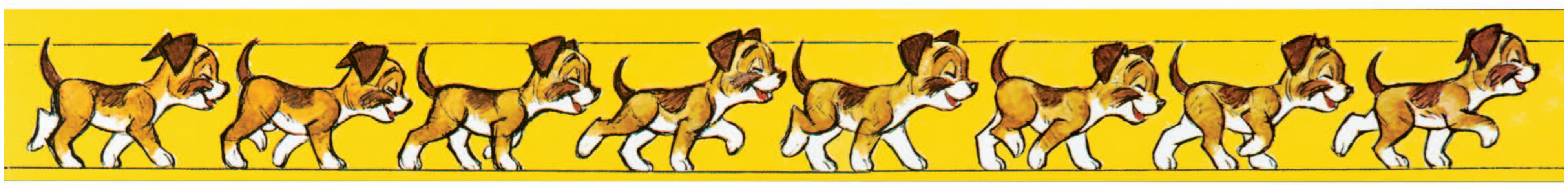
Trot Opposite legs lift and contact together in sync. In a pace action, see the same front and back legs work together.



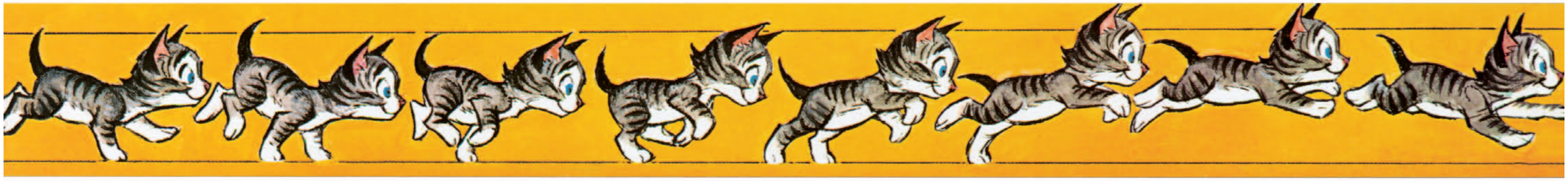
Canter The body tilts with a rising and falling action that is similar to a children's seesaw, causing rider to stand.



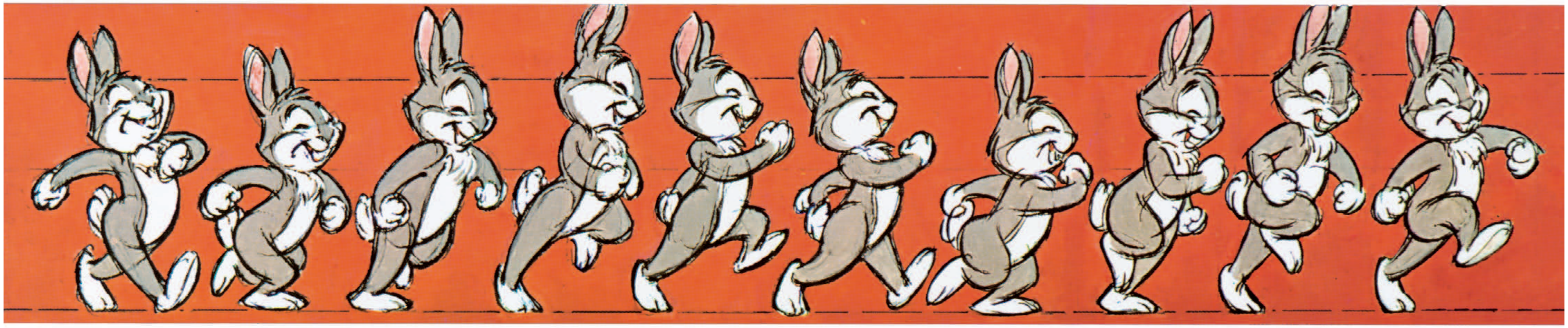
Transverse gallop Left legs can lead too. The same legs lead, unlike dog and deer that gallop with opposite legs leading.



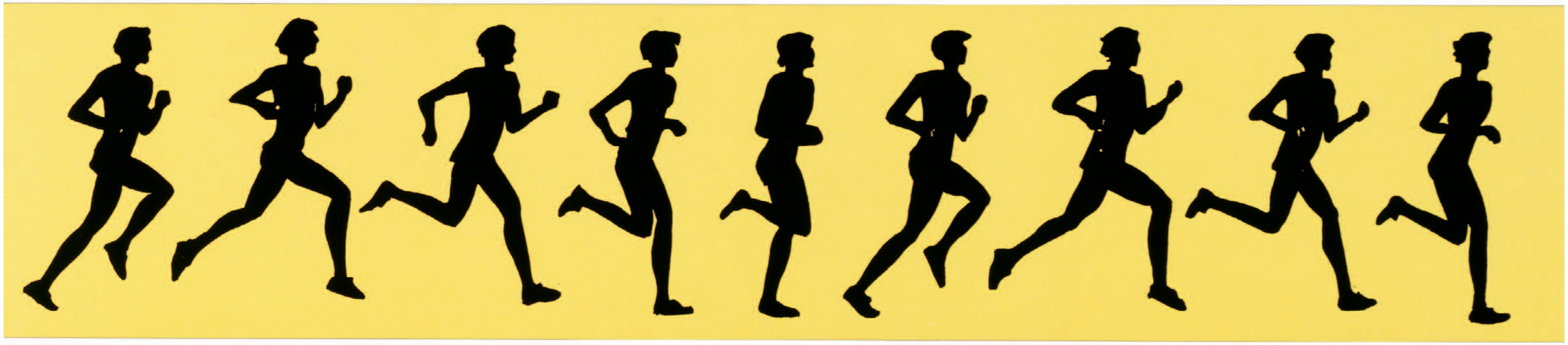
Four-legged walk The back legs are one-half step ahead of the front legs. This complete cycle is two steps.



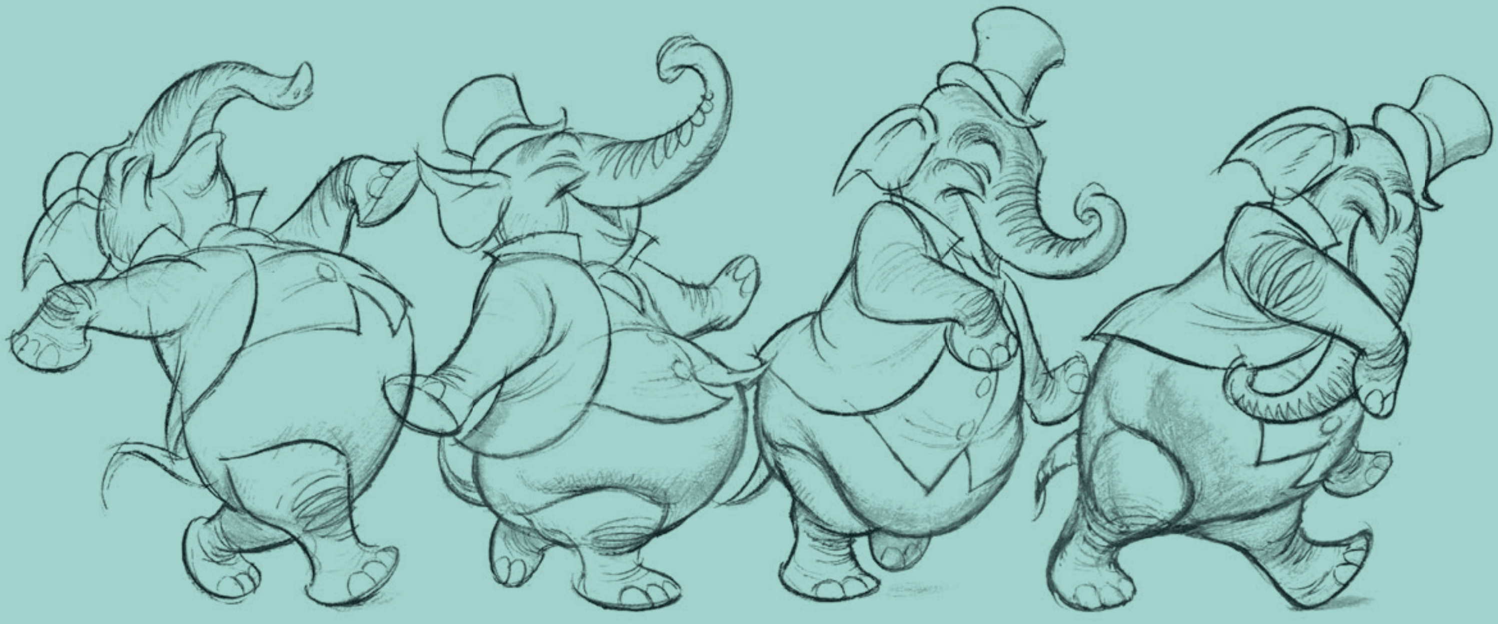
Transverse gallop Both left legs lead here. Cat also gallops like horse with right legs leading. Just reverse legs.

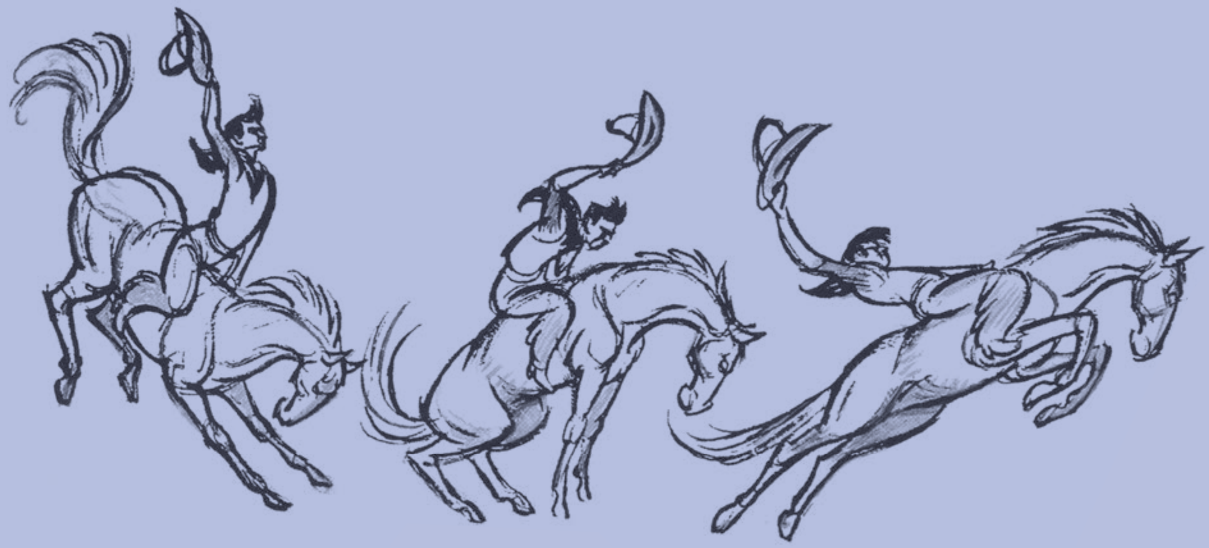


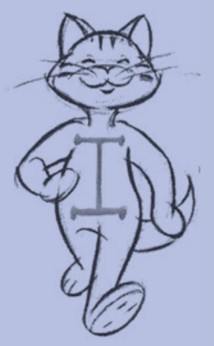
Cocky bounce-walk First drawing is contact, next is recoil, then a lift, then a high “float,” and then back to contact (opposite foot).

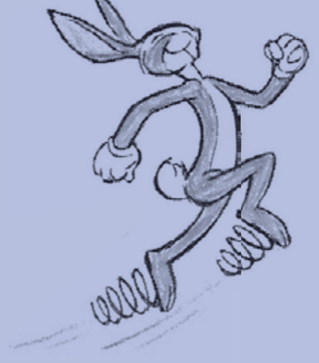


Run Silhouette of runner from live action film reveals concave arc kick on foot before contact.

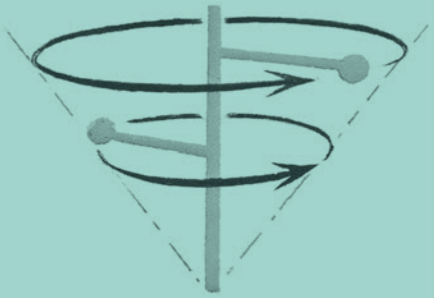




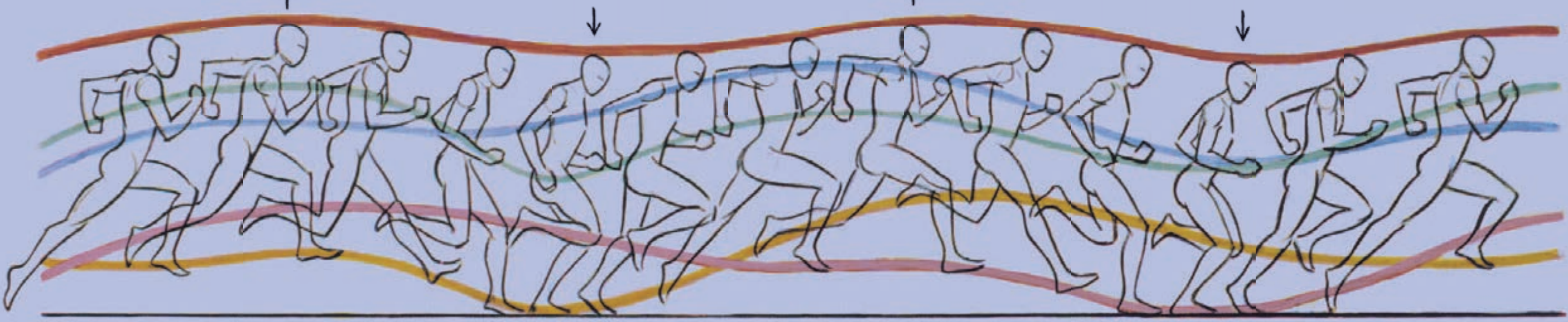




CHAPTER 5



ANIMATION PRINCIPLES

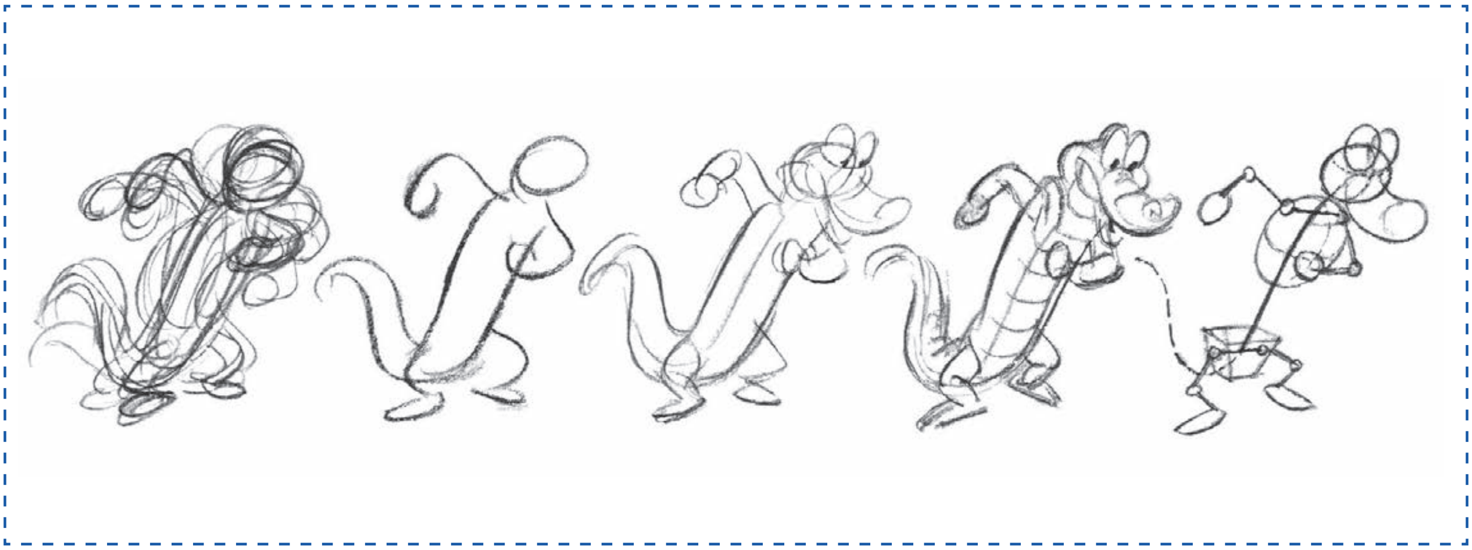


BEYOND SIMPLE MOVEMENTS

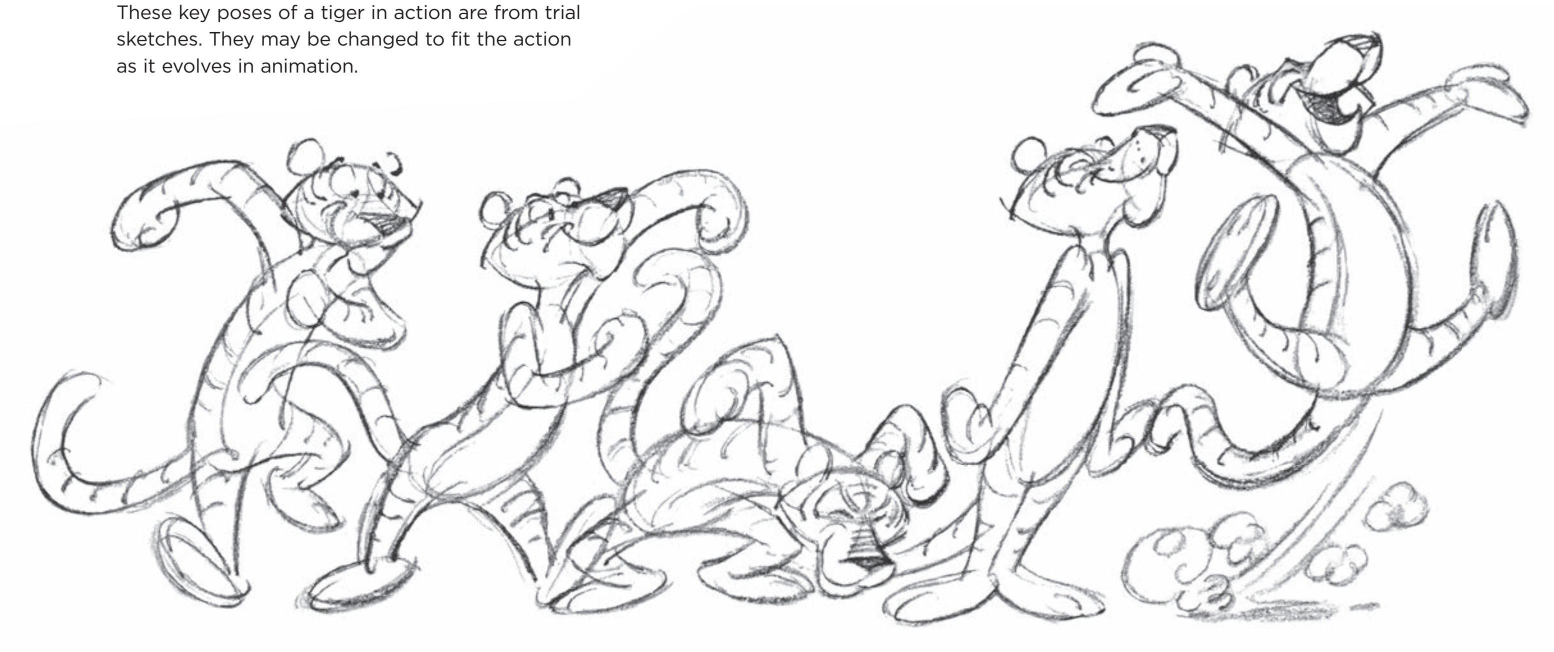
The basic walk or run is one thing, but when creating more complex animated movements, an animator must consider a number of things. Your characters can swing, throw, kick, fall, lift, and more. Once your plan for the character's action is set, you can design the actual movements and draw rough sketches. This chapter will help you develop an understanding of timing, overlapping actions, balance and movement, and arcs, curves, and paths of action in animated sequences.

ROUGH SKETCHES

Animators make a series of rough outline sketches that suggest the movement of a character. It is like handwriting words with no thought about forming individual letters—only about what you're saying (or acting). To draw a pose, make scribbles of what you see in your imagination and then study the scribbles for suggestions. Forget drawing—just scribble!

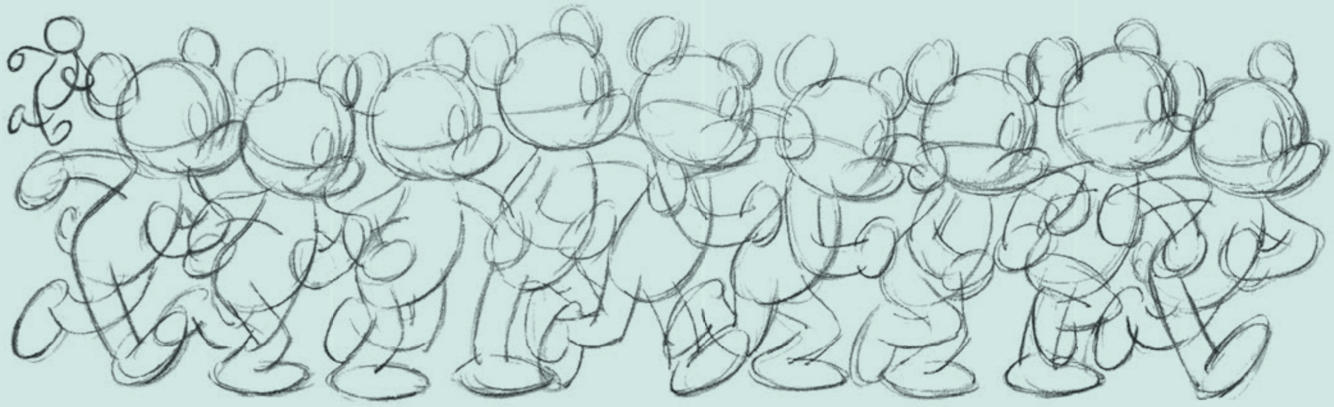


These key poses of a tiger in action are from trial sketches. They may be changed to fit the action as it evolves in animation.

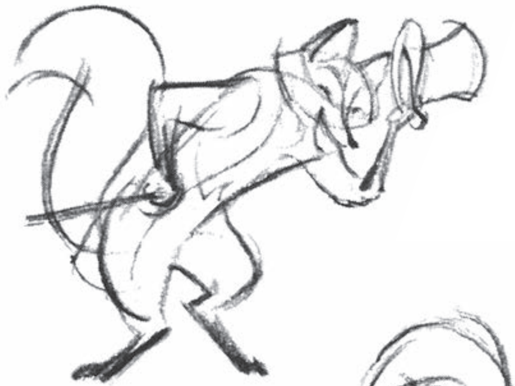


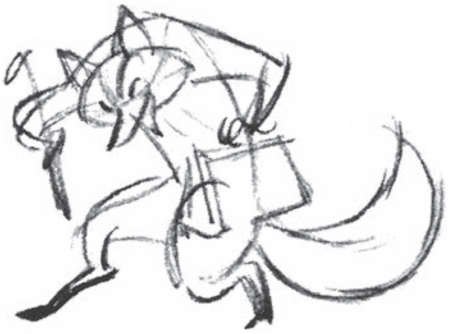
Creating Roughs

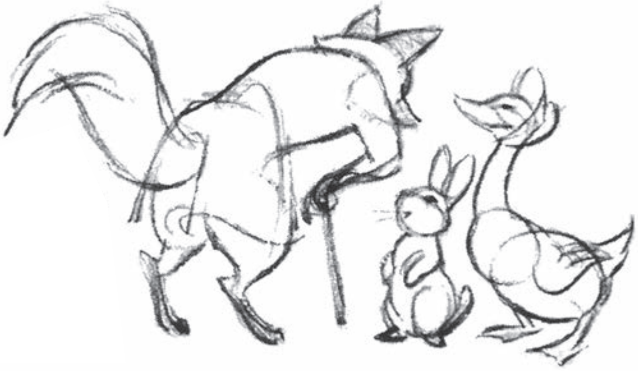
This is an animator's "rough" of a simple walk. A cleaned-up, finished detail drawing is made from this. You should know all about the skeleton, but animators don't draw the skeleton first; they sketch the outline. Scribbles can become multiple sketches. Keep trying to get a suggestion of what you want. A rough outline suggestion is the first step. It may take many scribble attempts. Use your imagination to develop the drawing.

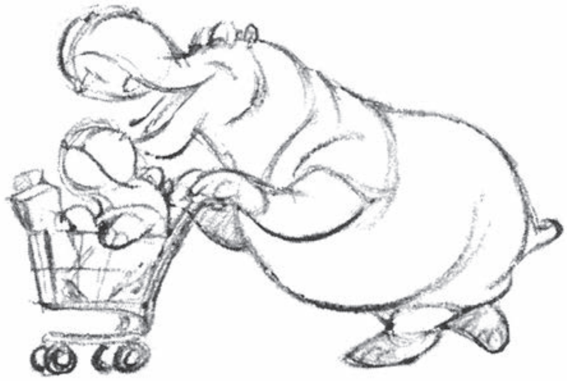


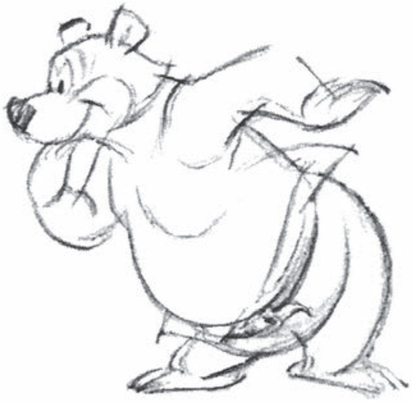
Drawing small "thumbnail" sketches of important poses brings out the overall structure and appeal and makes for broader drawing and less attention to details.









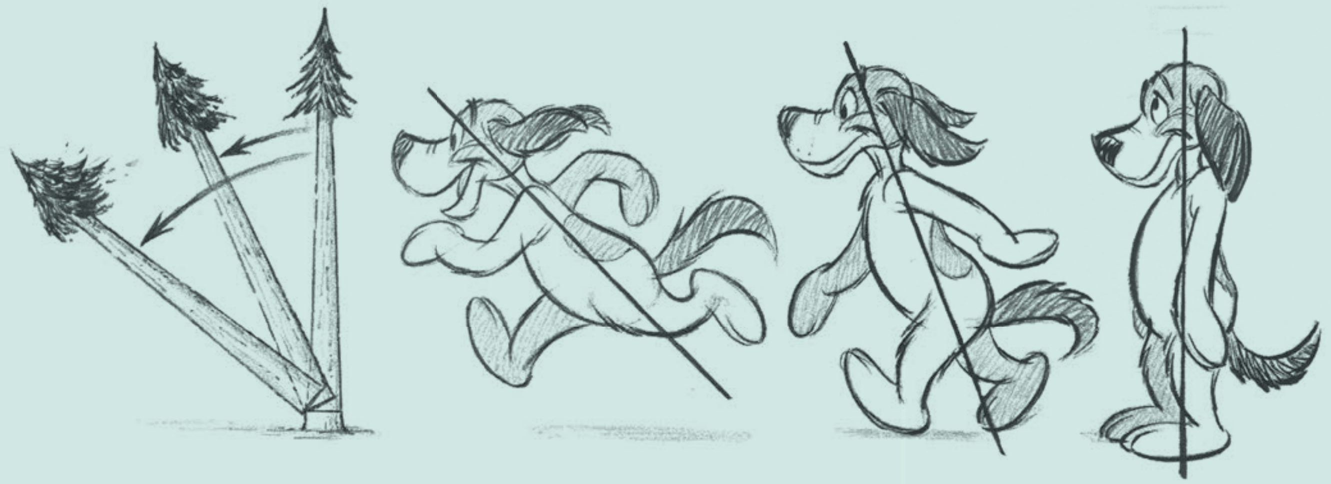


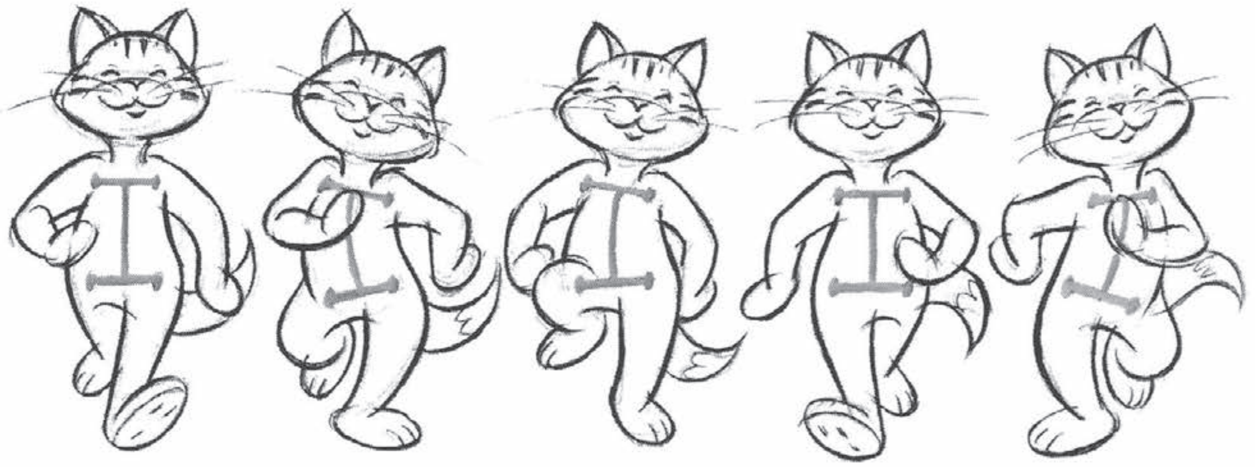
BALANCE

For realistic animated movement, pay close attention to how the characters should balance. Arms swing and hips tilt during a walk, the center of balance changes in a lean; whereas, a thrust in any direction triggers a chain reaction balance in the opposite direction in proportion to the speed.

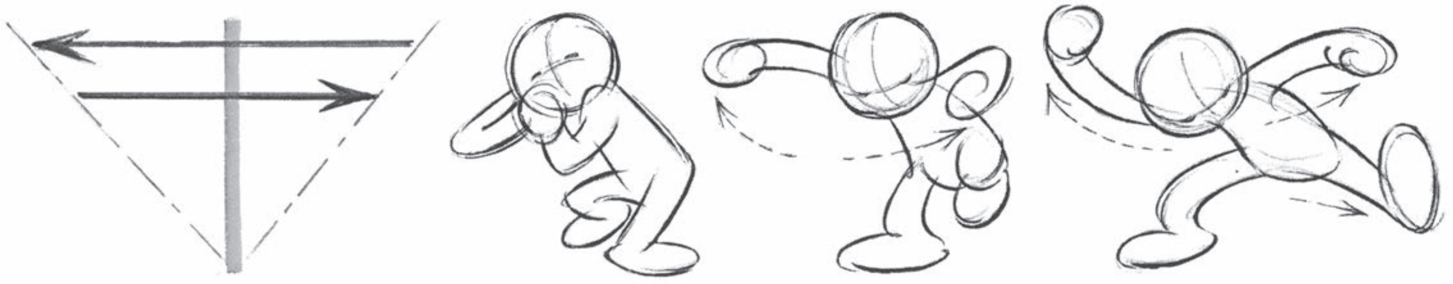
Finding the Center

The "center of balance" line tips in a forward movement in proportion to the speed of action. Note that characters can also run leaning backward, and the balance line can be a curve.

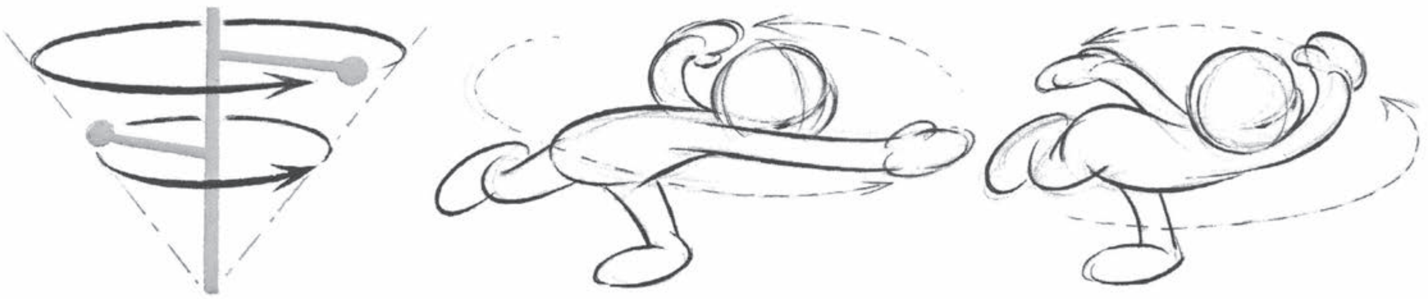




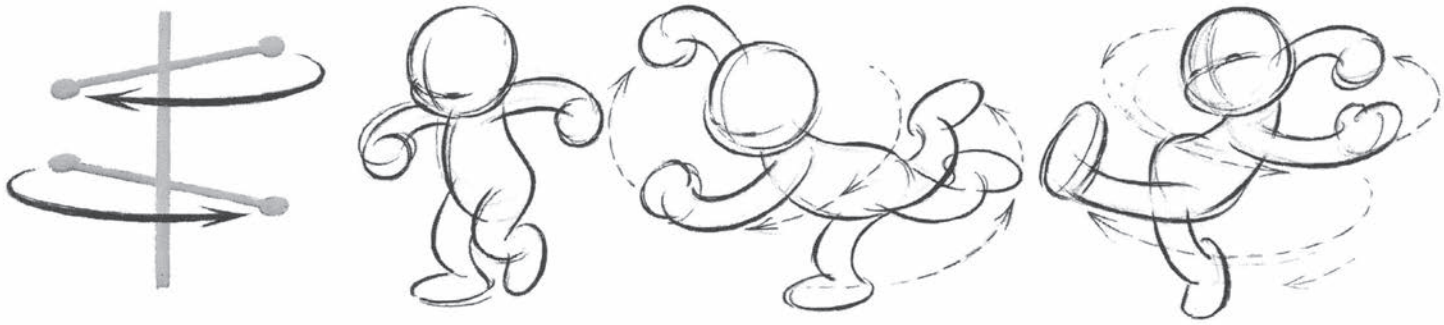
Tilt in a walk or run In a walk or a run, the hips sag with the leg lifted, which triggers a chain balance reaction in the tilts of the chest, shoulders, and head. The arms swing higher on the relaxed side and lower on the other side. This action gives weight to a heavy giant or a large animal with a ponderous, crashing gait. It is not typical of closely knit athletes.



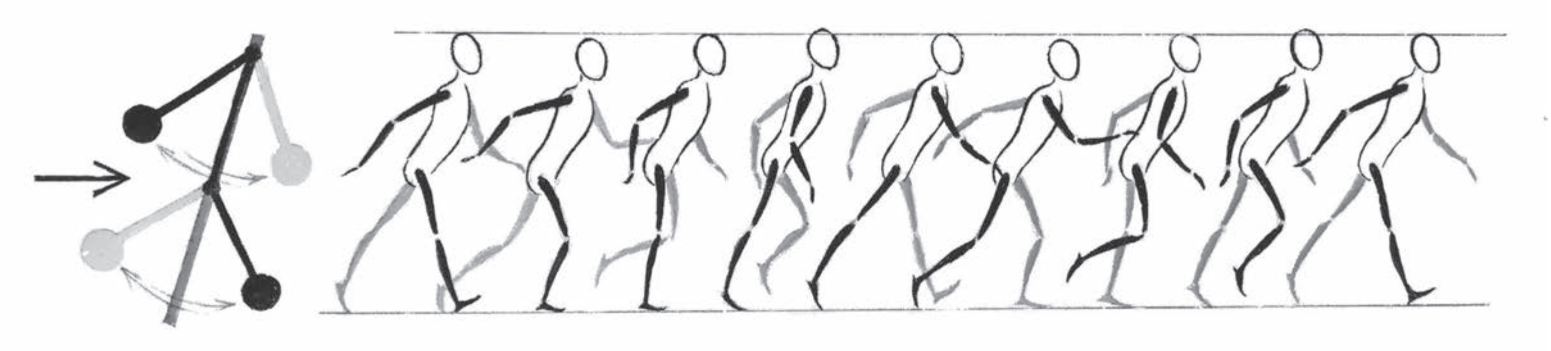
One-directional thrust These balancing reactions do not need to be simultaneous to the thrust action or to each other—they may overlap.



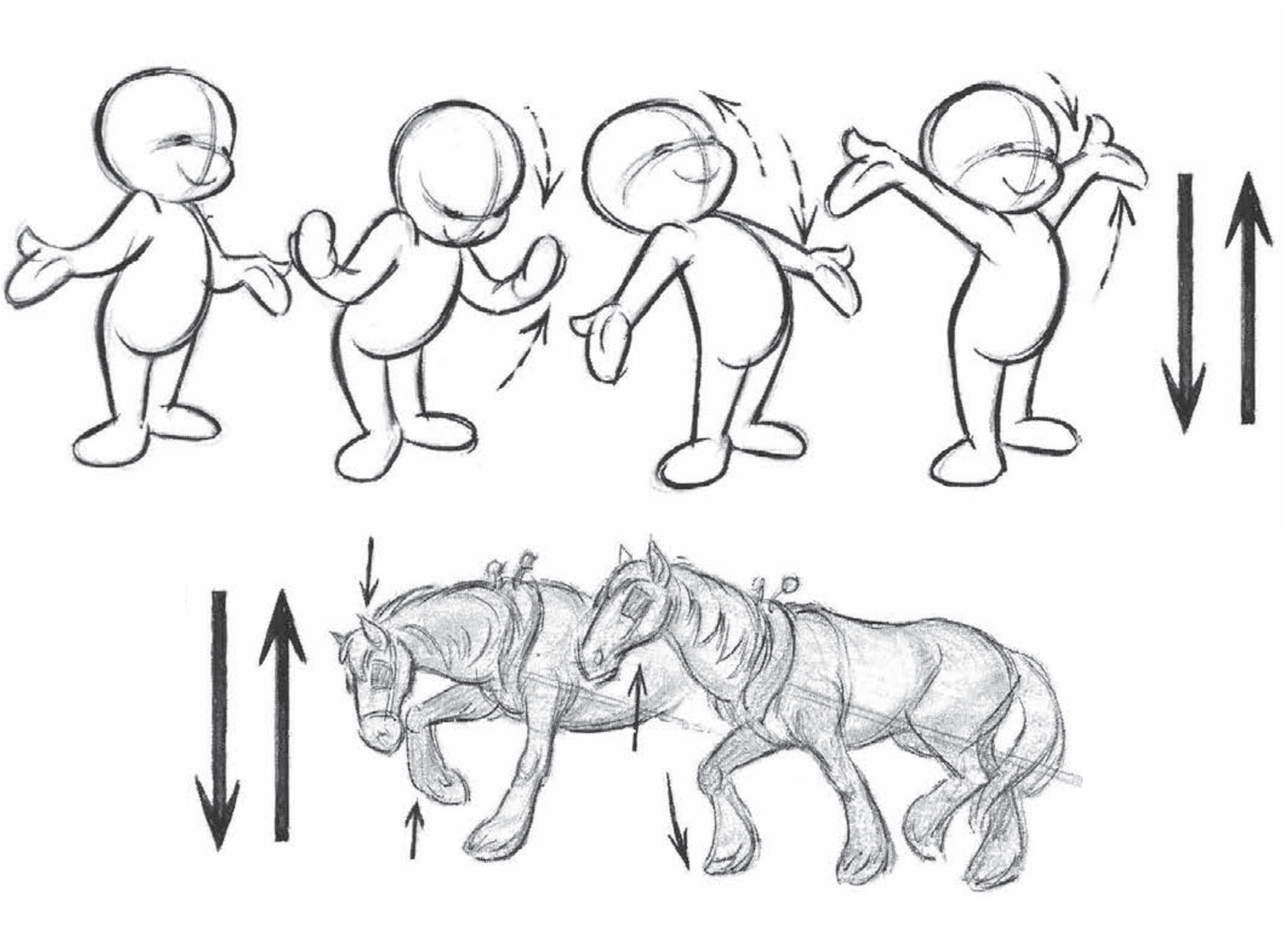
Circular swing A thrust in a circular swing triggers a corresponding swing on the opposite side of the circle movement. This circular path of action can be horizontal or tipped to any diagonal angle, or it can be a vertical circle.



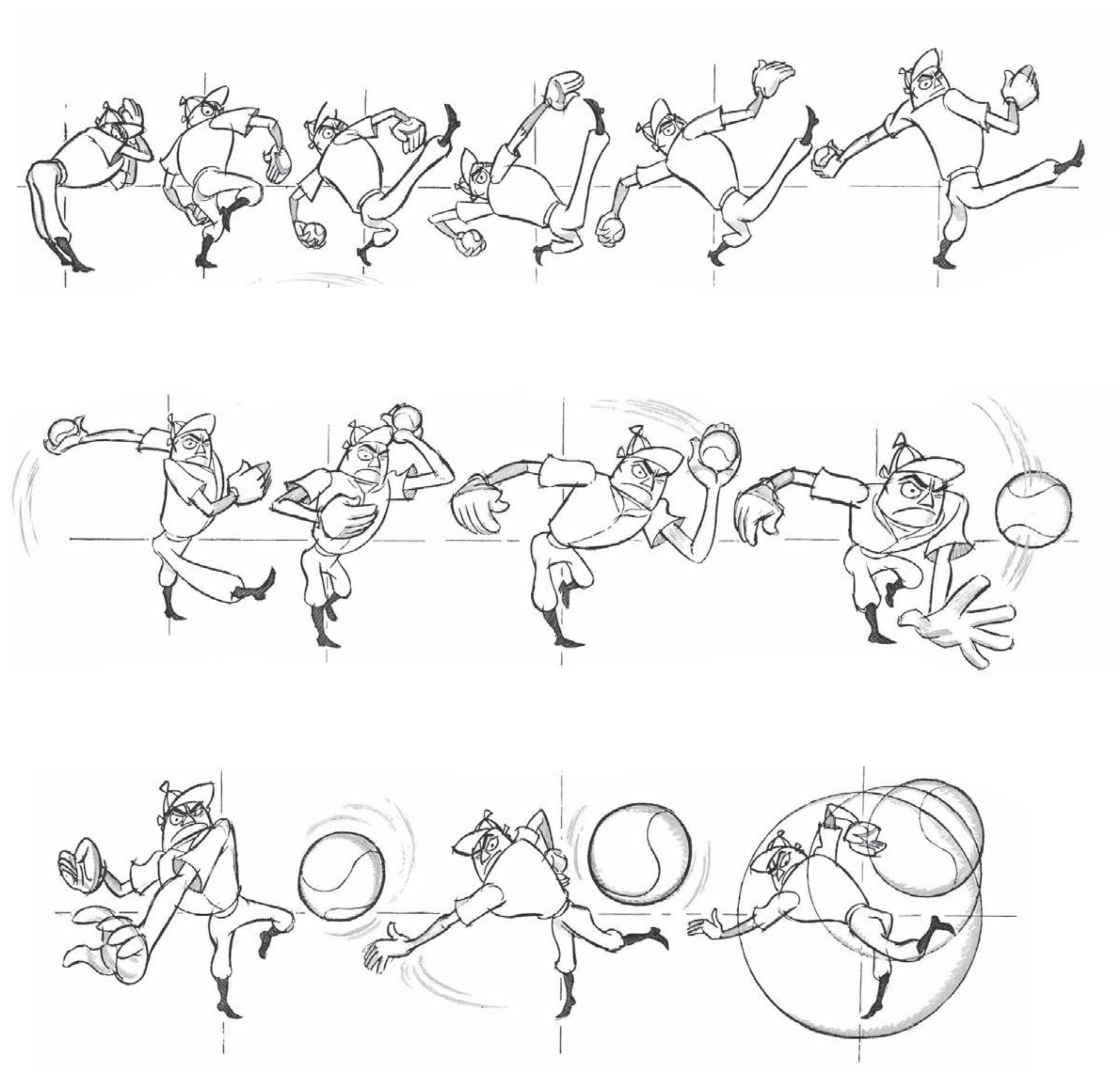
Two-directional twist As the chest twists with a thrust, the hips twist in the opposite direction in a balance reaction (or vice versa). These balancing reactions need not follow the thrust; they may precede and/or move after the thrust of action.



Pendulum balance The arms swing as a reaction to the thrust of the pendulum leg action of a walk or a run. The extreme of the arm swing is not on the leg contact drawing but on the recoil. The leg moves back and straightens in the push-extreme. As a balance to the lifted leg, the arms move forward in a lower arc than their return.



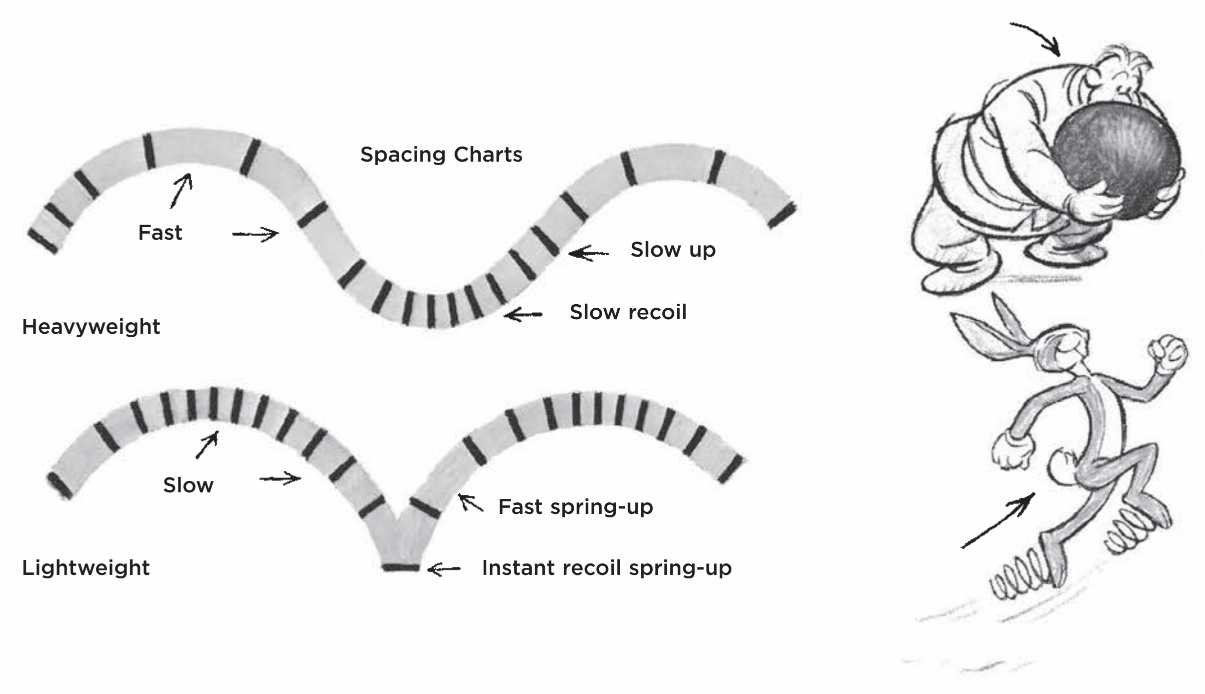
Vertical thrust A movement up or down can create a vertical reaction. This action is important in dialogue moves of the head and arms and in anticipation action drawings of a hunch-contraction into a thrust. When the leg lifts, the head and the arms react by lowering. In a heavy draft horse action, the head lowers as the leg lifts in a pull.



Exaggerated balance This baseball pitcher goes through an elaborate balancing act as he lifts his foot in a windup before a leg swing that has been exaggerated in foreshortening. As he starts the pitch, the arm is delayed to give more intensity to the action. Single-drawing draftsmanship is abandoned for the draftsmanship of a series we see in less than a second.

WEIGHT

The timing of a character action has a great deal to do with weight—or lack of it. See how weight and its distribution affects the balance and movement of a character.

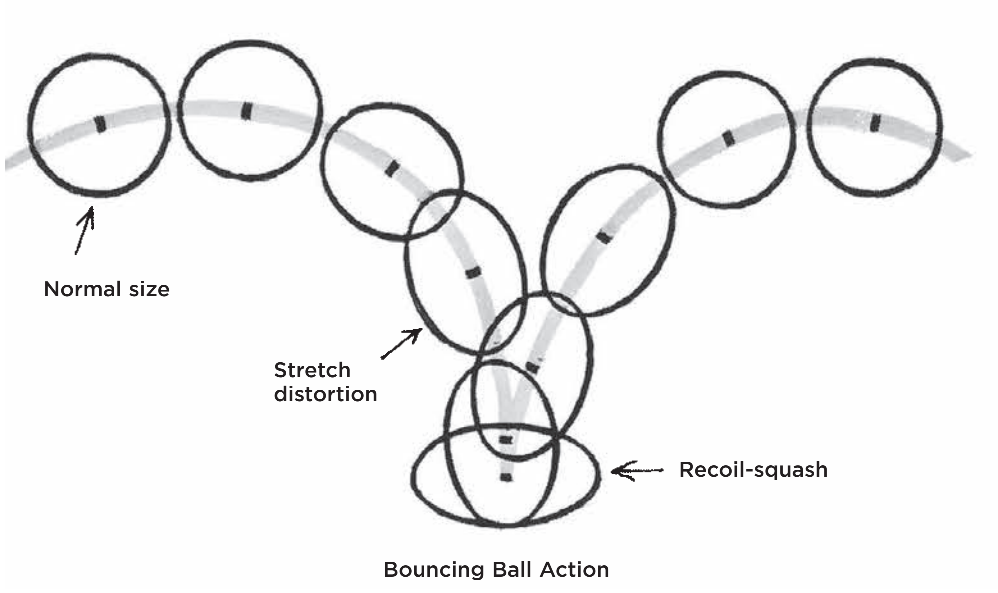

Spacing Charts
Fast
Slow up
Slow recoil
Heavyweight
Slow
Fast spring-up
Lightweight
Instant recoil spring-up

Heavy weight is registered in animation by

1. The visual struggle to move weight.
2. The visual effects of stopping weight.
3. The timing caused by immobility and gravity.
4. Chain-balance due to types of sag.

Light weight is registered by

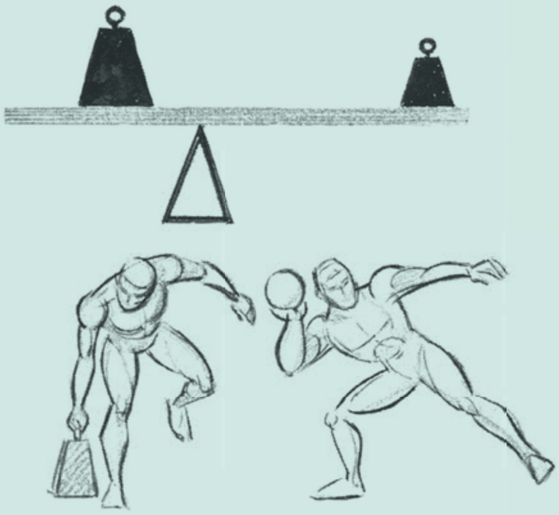
1. The spring up with no resistance.
2. The elimination of recoil processes.
3. Timing caused by mobility and float.
4. No sag, stress, strain, or squash.

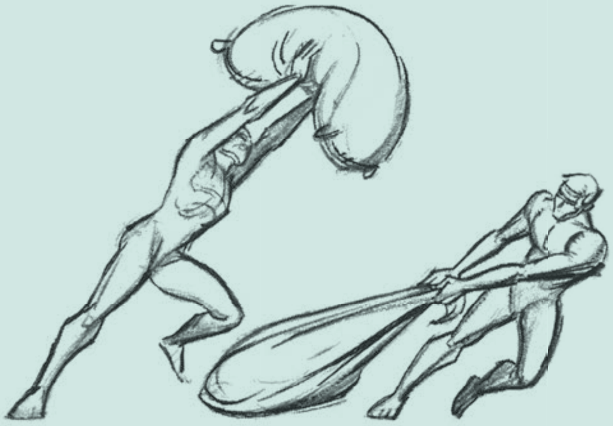

Normal size
Stretch distortion
Recoil-squash
Bouncing Ball Action

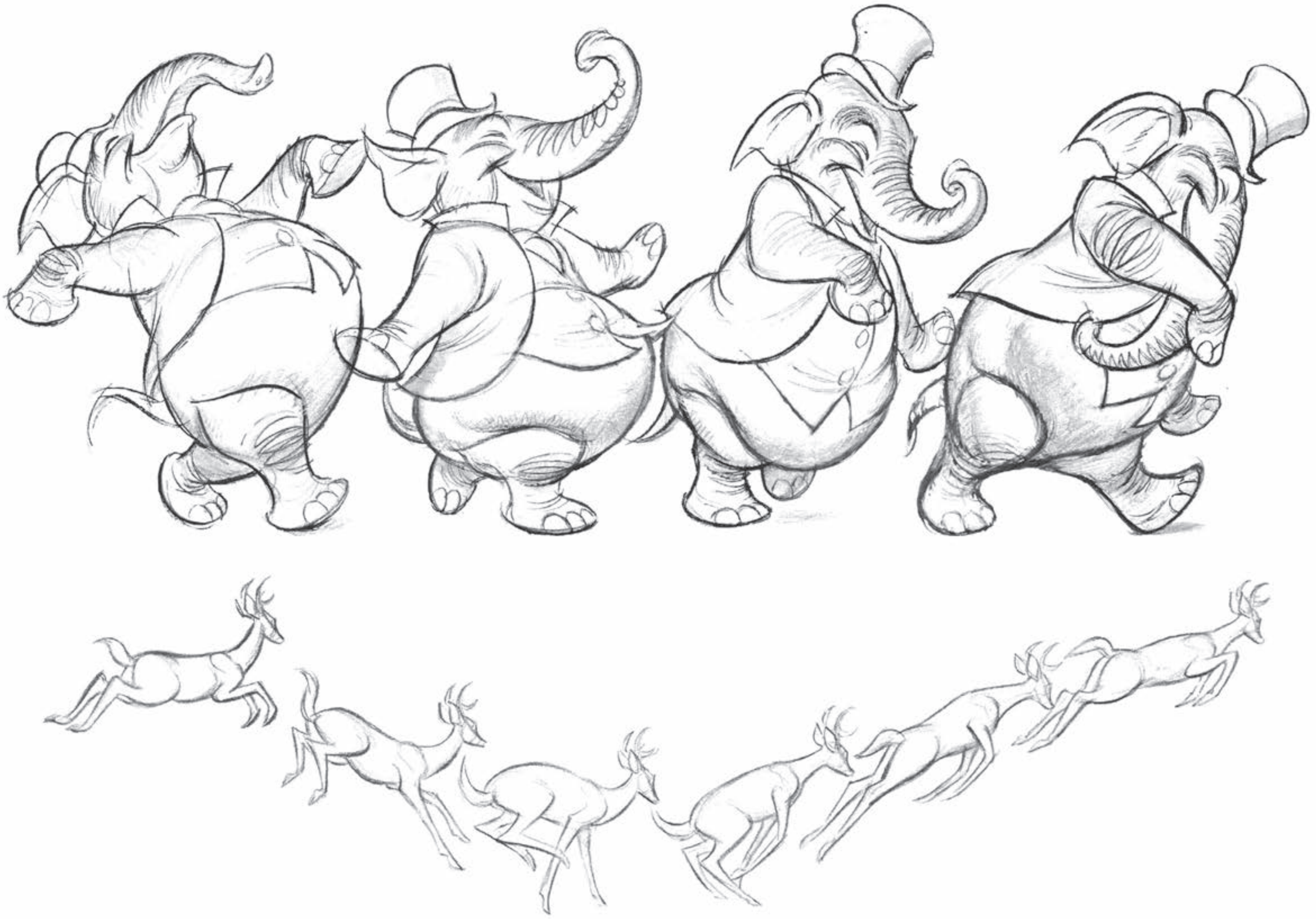
Bouncing ball principle The bouncing ball principle illustrates the basic recoil-squash-contraction and the stretch-elongation that are part of most character movement.

Looking at the Effect of Weight

The off-center balance is caused by one-sided weight (below, left). The chain balance is exaggerated in a figure action caused by a high sag, such as with heavy giants and animals. Strain is created when moving heavy bodies or weights, and stress is created when pulled and pushed anatomy shows weight (below, right).



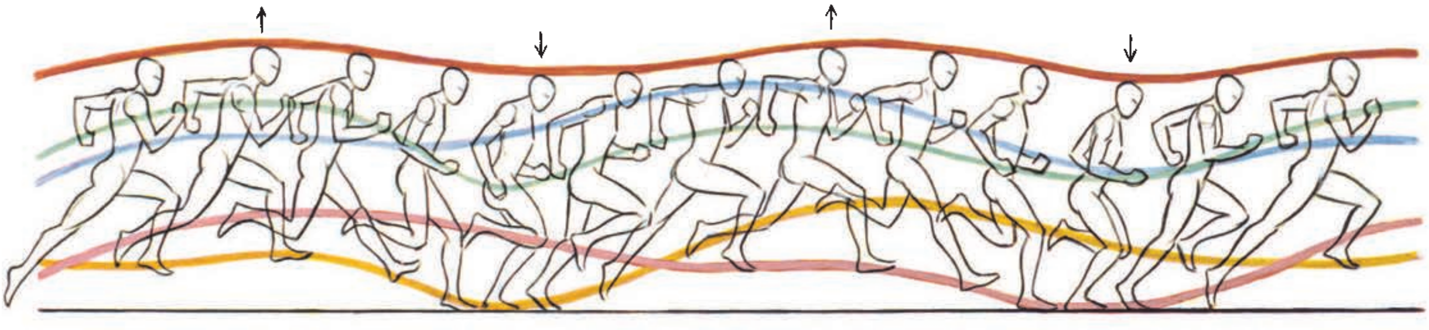


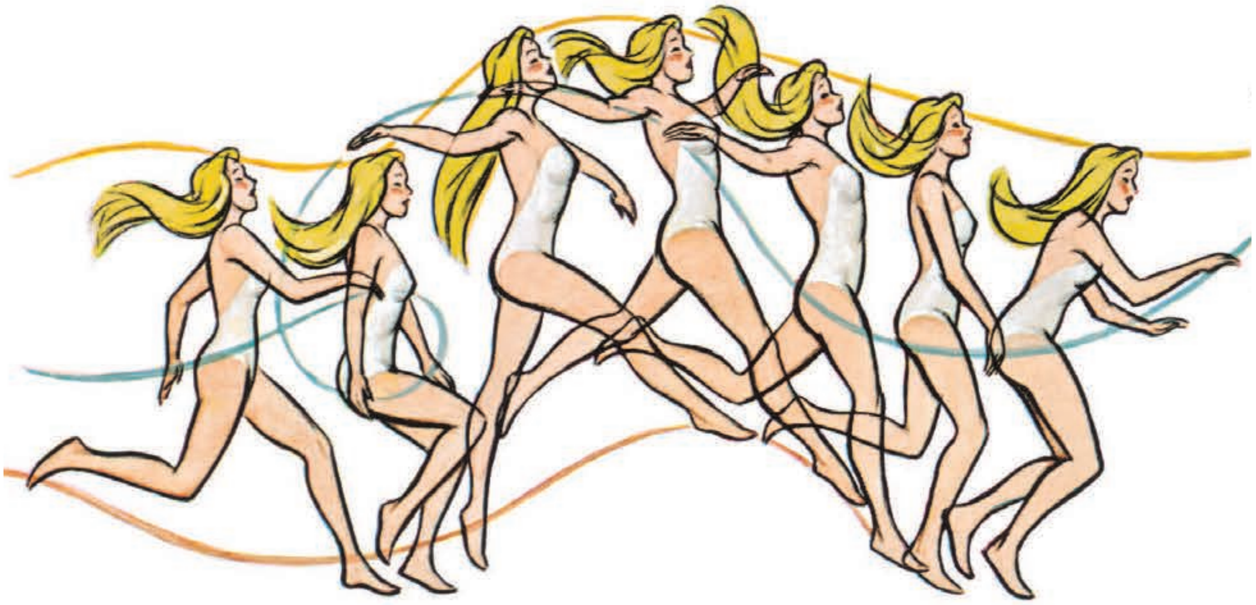


The elephant shows overlapping squash-recoil and stretch. The recoil process takes time for an elephant, while the deer hardly touches the earth, springs up, and floats, untouched by gravity.

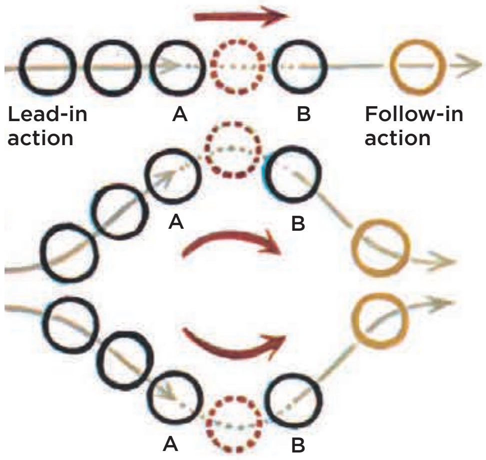
PATHS OF ACTION

A character moves in paths of action that either curve or go straight. If a drawing is placed in an action that does not fit the path or the spacing plan, a jitter, a jerk, or an unrealistic action will occur. You don't need to chart all the paths; you can see them when you flip the drawings. The degree of an arc in an in-between can either improve or stunt an action.



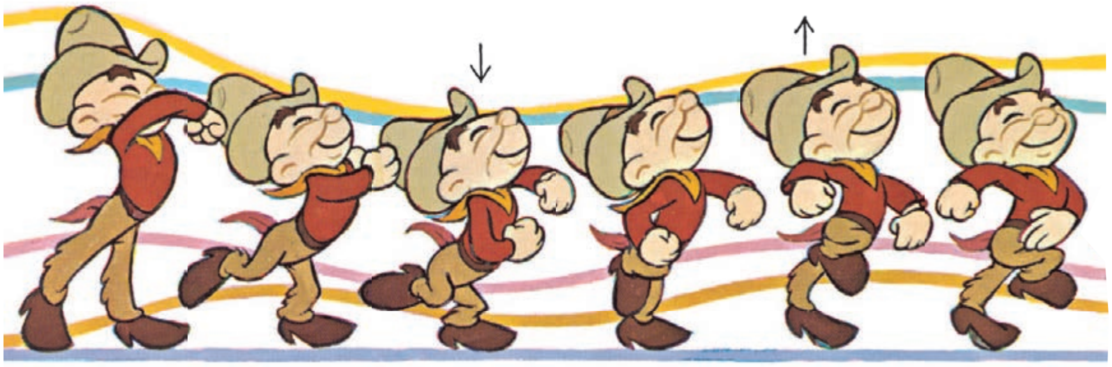


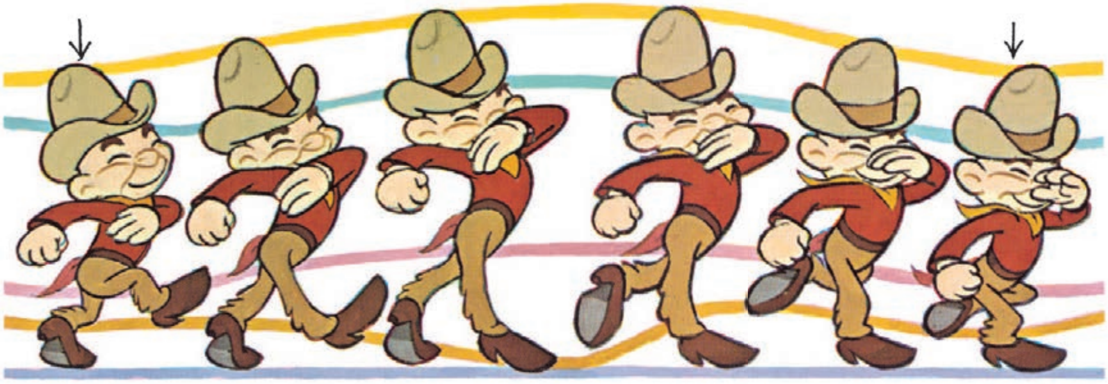
Experiment with the degree of arc in the in-betweens. Will the woman's action above be improved if a drawing between 1 and 2 dips lower in a crouch anticipation than the path indicates? What if a drawing between the high 3 and 4 were higher? What if a drawing after 7 were lower? Try to think like this. Experiment. Flip the drawings to see if you are correct!

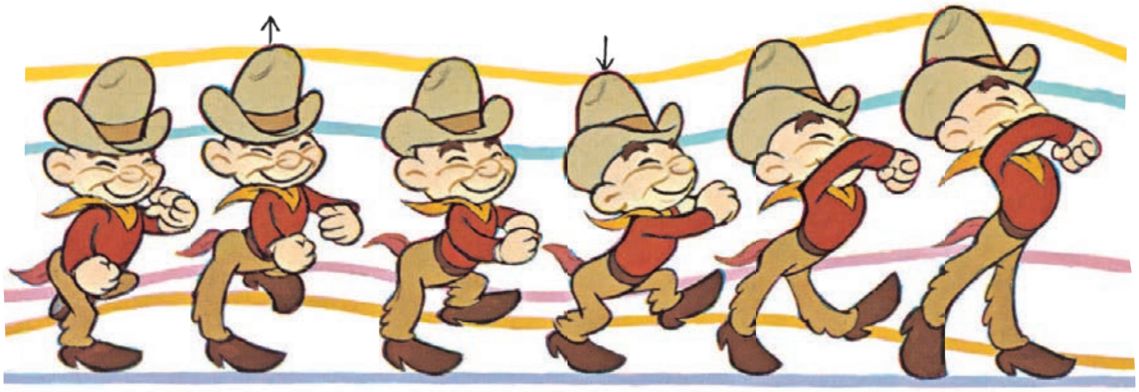


Consult the drawings going into A and out of B. Check at least two prior drawings and a following extreme. There are two things to notice: 1) What is the right arc, if any, and 2) is the drawing exactly in between, or is it closer to A or B according to the progression of drawings? This is arc and spacing. Experiment!

Never move a character without meaning. Bring out a gesture, mannerism, or story mood in every cycle. Two of the cycles are combined in this cowboy's double-bounce-strut. Notice the cocky gesture at high points. It is a series of closely related drawings; no time is lost in going to the opposite step gesture. Using this double bounce-strut as a guide, try animating the same action and paths using Rowdy Rabbit from page 49. Note that there are multiple action paths, indicated with the different-colored lines.





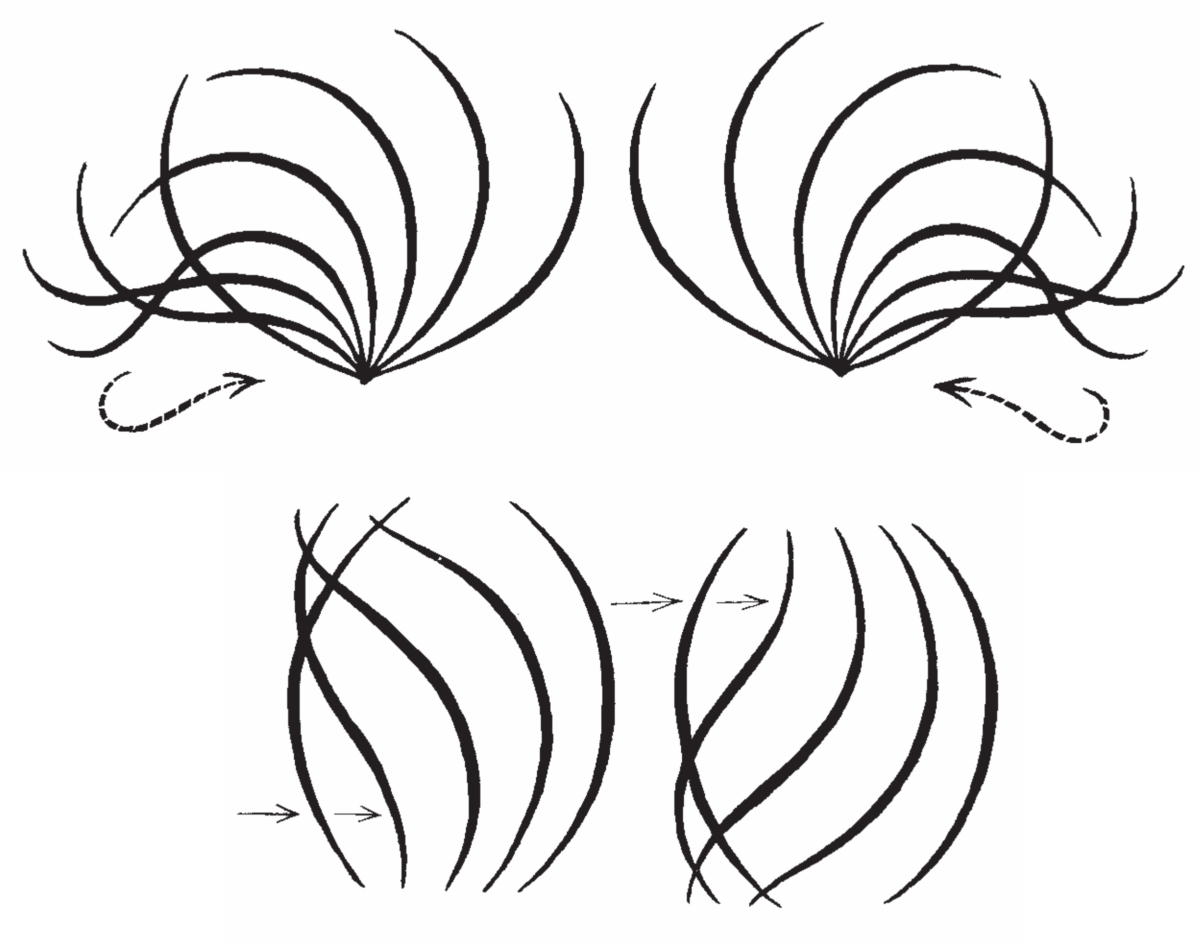


Making In-Betweens Easier

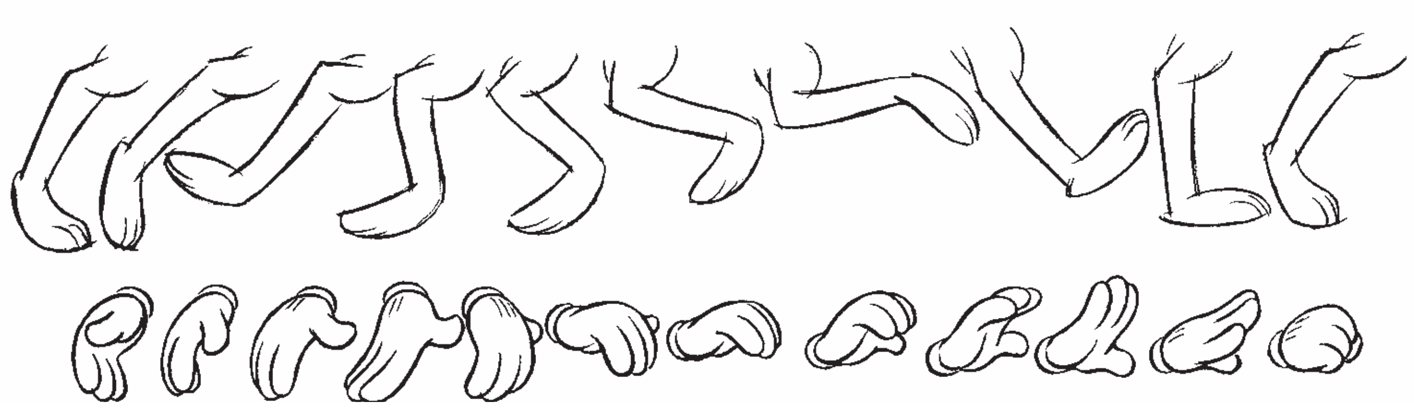
Take your drawings off the pegs of your animation board, shift the extremes so the details coincide, place the corners of your in-between paper between the two shifted extremes, and make an in-between on much easier terms than the pegs allow. Make a light mechanical drawing—no matter how crude—between lines, and then correct the drawing of the in-between, flipping all the time.

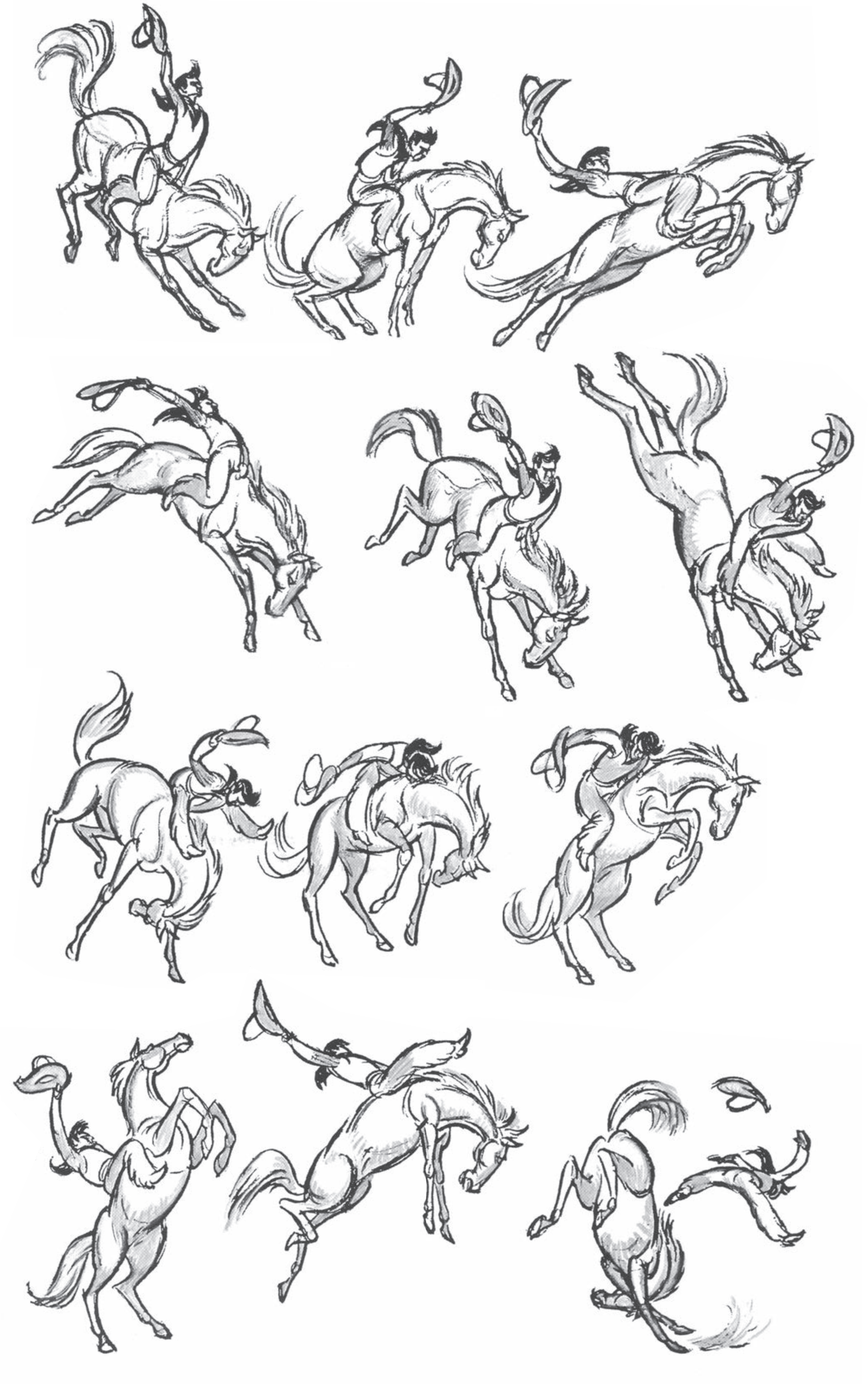
THE WAVE PRINCIPLE

The movement of legs, arms, and hands, and the anticipated movement or actions are based on the wave principle. These are excellent methods of “waving” the animated movement in the proper direction. The “line of beauty curve” (like an “S”) animates as a wave into the opposite Z-shape and back. The wave is pushed or manipulated from one side to the other. In animation we build from the first drawing and start a chain reaction of rhythm lines waving. This chain reaction of waving actions is important to character movement.



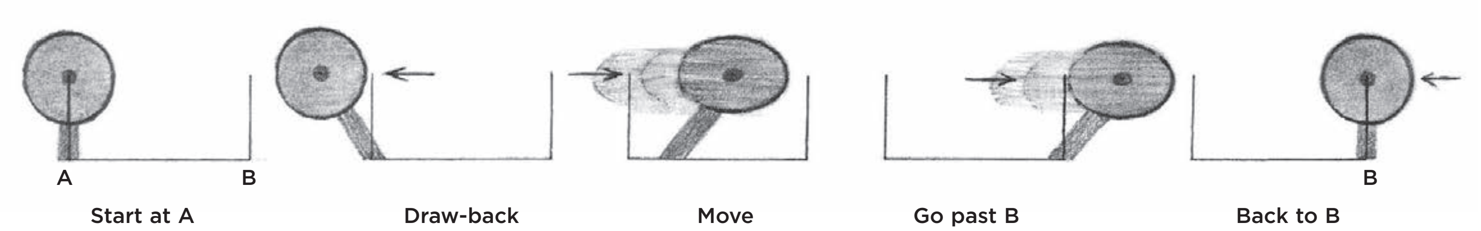
The first three diagrams above are waved from the base; the fourth is waved from the top. Be sure to wave rhythm in the right directions. At right, for example, the horse waves the cowboy around like a flag.





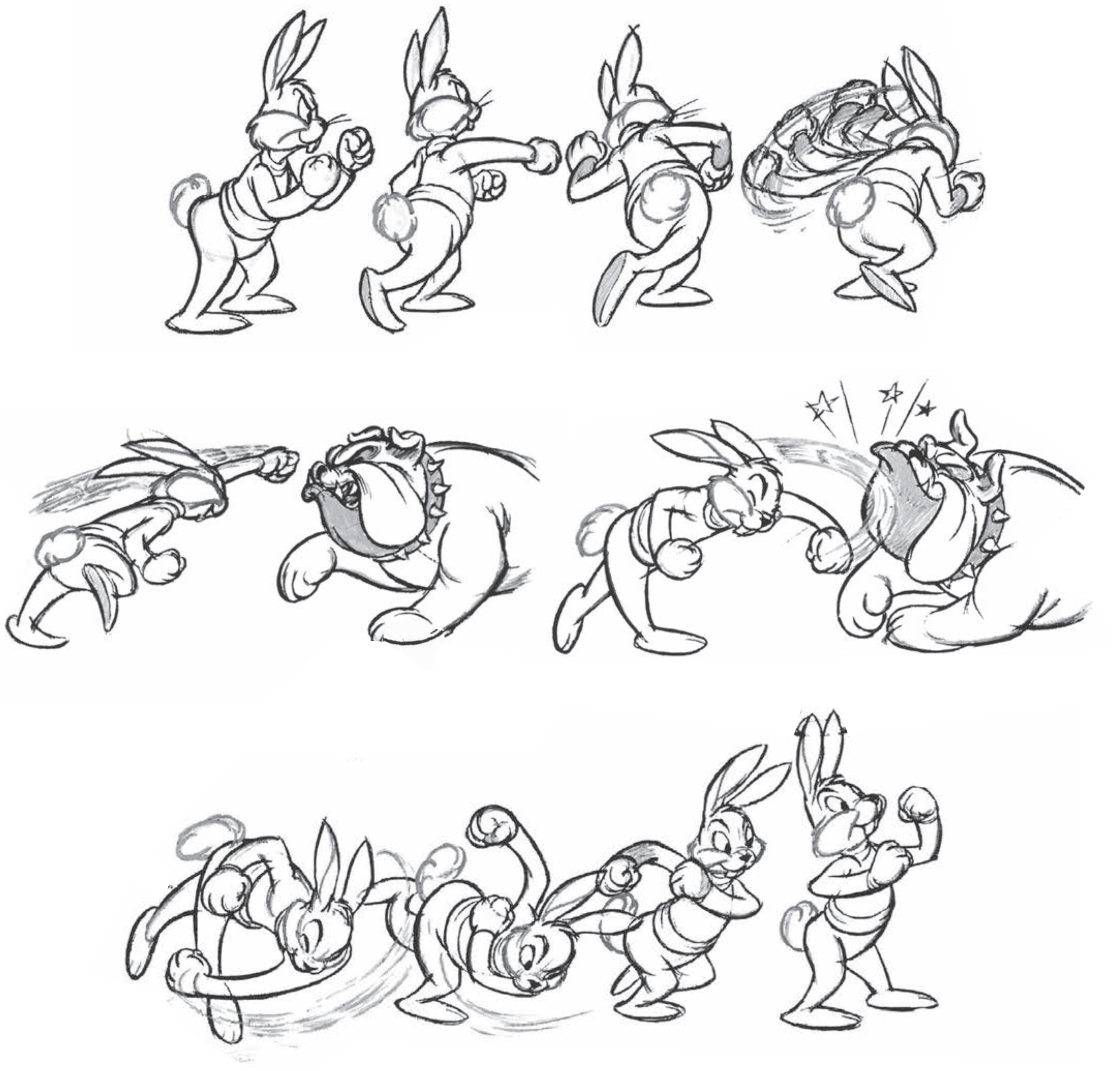
ANTICIPATION, ACTION & REACTION

An action like the swing of a pendulum is a move between two extreme positions. An action drawing of the pendulum in center position has little visual value to depict the action. It is the extreme positions of the pendulum that depict the action—and measure it. The first extreme is anticipation: get set, wind up, pull back, contraction-crouch or rise, or pull up (the latter for a down move). The second extreme is the reaction-recovery from the move—either a crash or a stretch-and-settle that may vibrate. The slightest move in any direction may be reinforced with a move in the opposite direction, into an anticipation before the act, and then a recovery process.

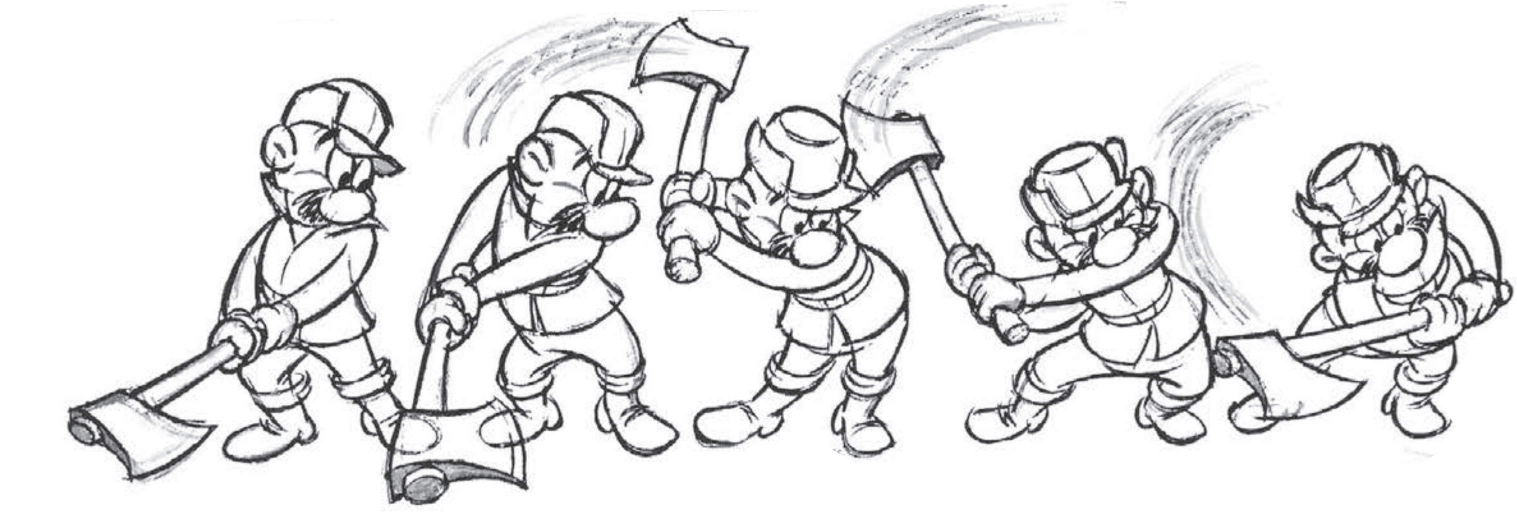


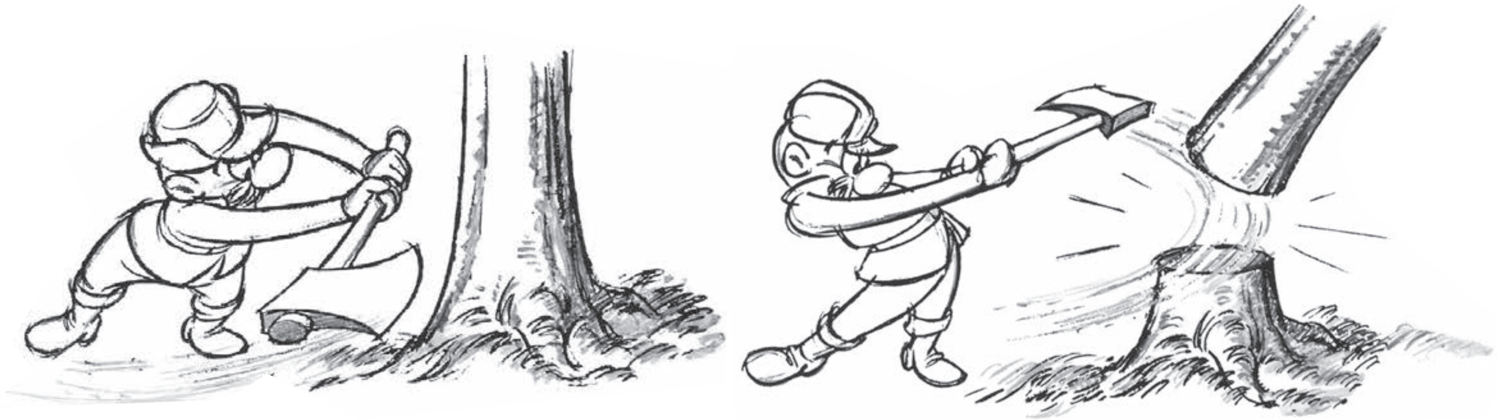
Start at A **Draw-back** **Move** **Go past B** **Back to B**

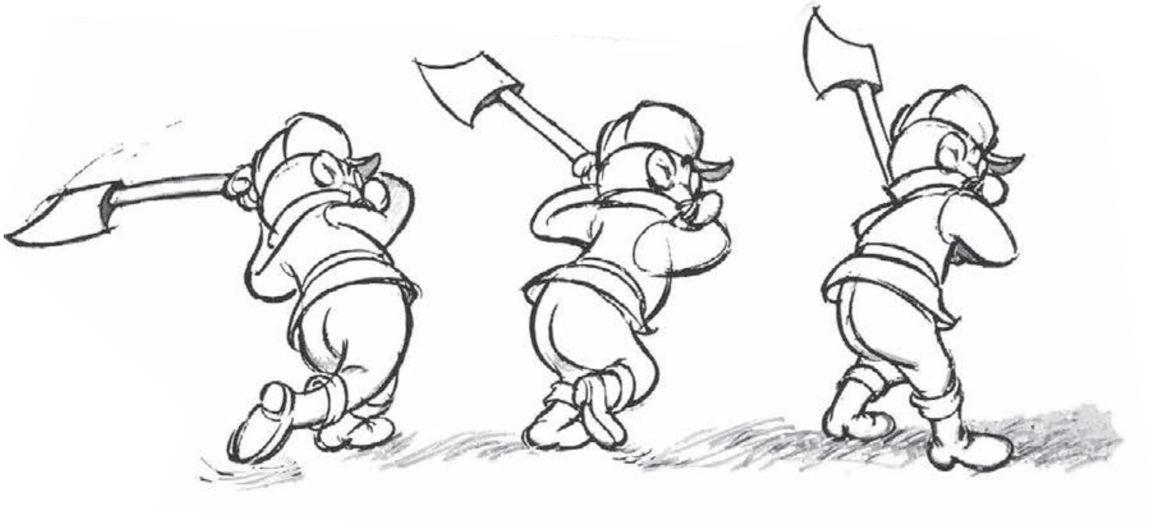
The actual contact drawing is of such little value that it is often best to eliminate it, as shown with this rabbit punching a bulldog. In a golf swing we eliminate the drawing of the club actually hitting the ball; in a football kick, we skip the foot contacting the ball, etc. The effect of this trick is a crispness of execution because you never see it.



In the actions below, we don't actually see the woodcutter hit the tree. This is not a trick; it's a timing exaggeration. However, a trick like the magician's sleight of hand is valuable to the animator. Called a "fake," it is used in situations like the drawing of the woodcutter. His axe fits the action simply, and the truth is a quick twist on the axe.

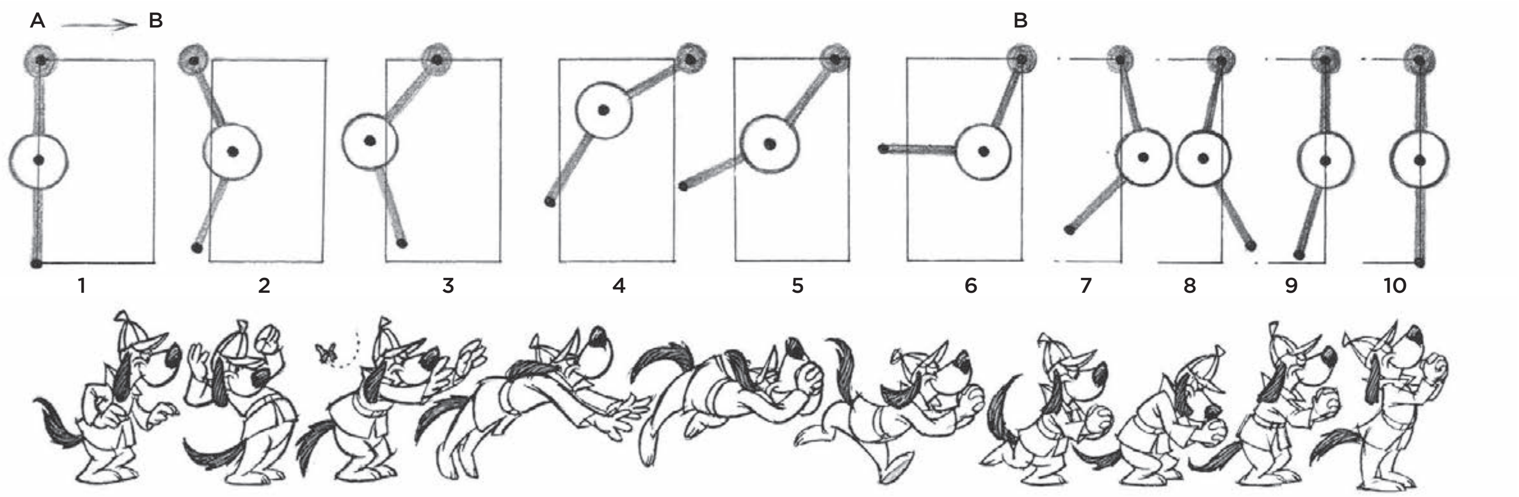




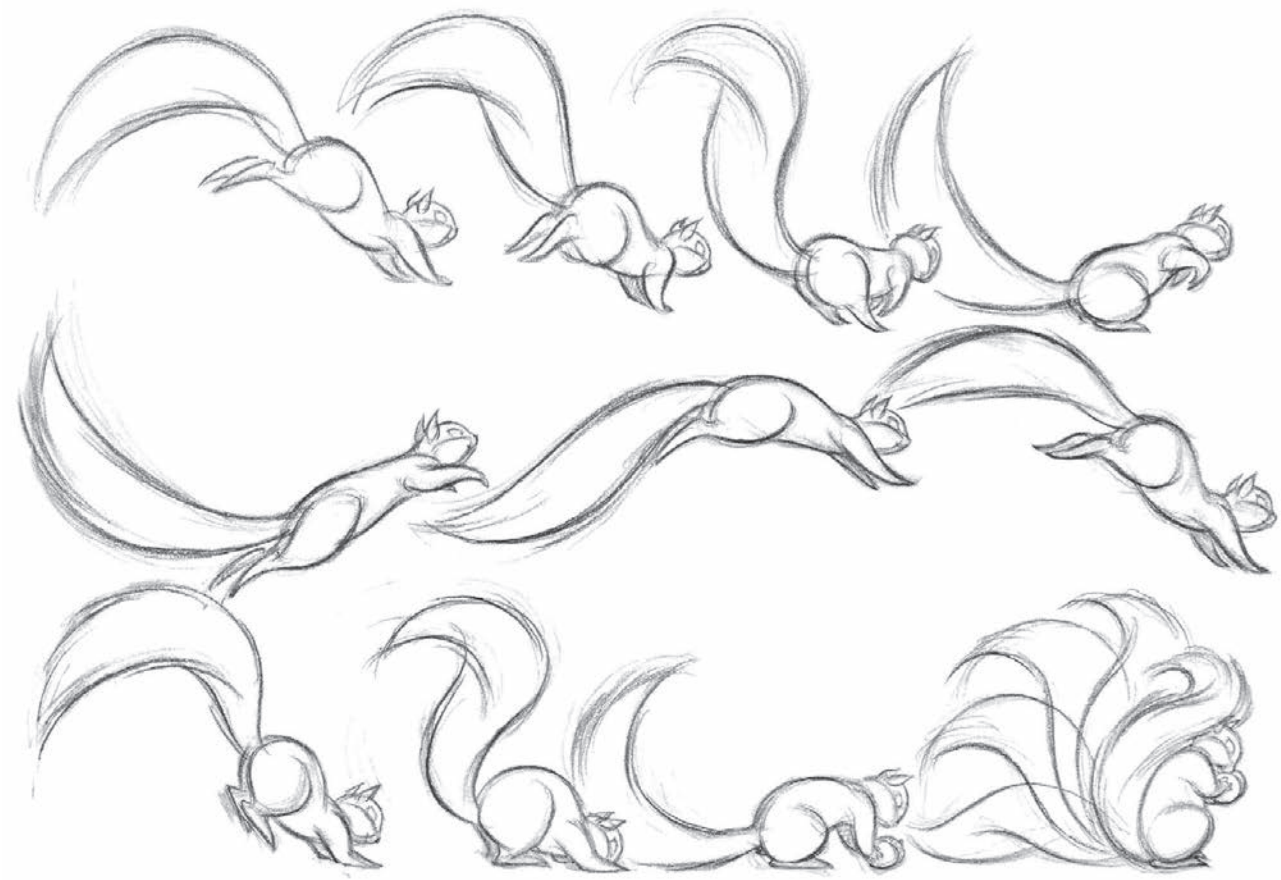


DELAYED SECONDARY ACTION

When animating a character from one point to another, don't go there with all parts of the character at once. Instead, arrive with delayed secondary actions, as illustrated on this page. Delayed secondary actions are effective in putting life into poses and holds. A chain of parts can arrive late at different times and in different timings to take the curse off any held drawing. Then various parts, such as the eyes, can "telegraph" the next move in secondary actions that precede it. Thus, limited animation can become very convincing. However, this is not an economy animation formula; it is based on life. Nothing moves in equal compartments of all parts in unison.



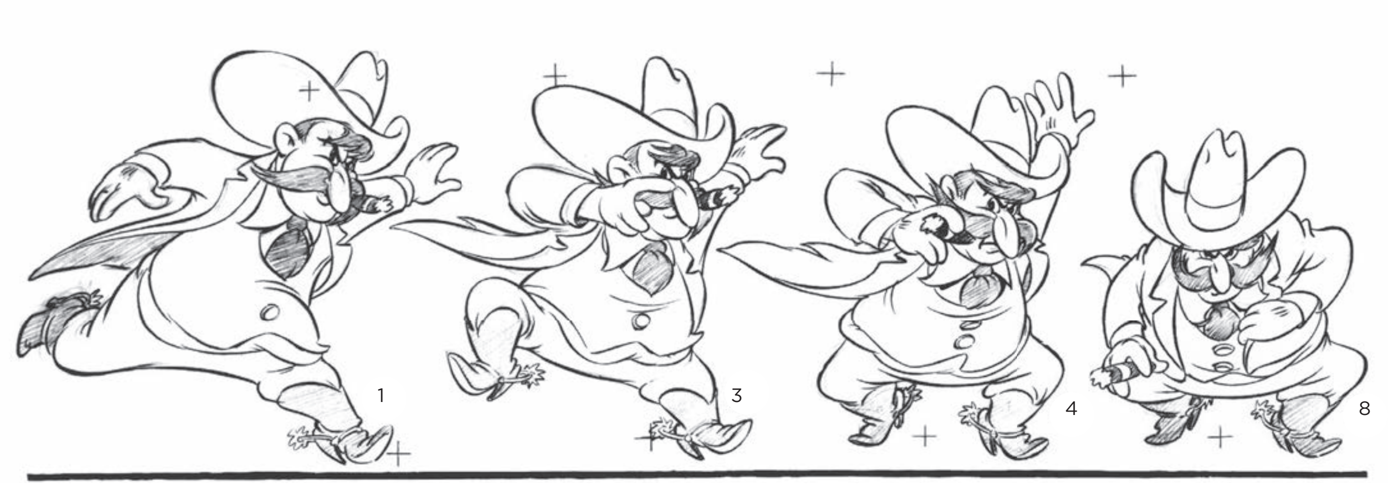
The double pendulum action above illustrates a primary action of the dark circle from A to B, followed by two secondary actions of the pendulums. This principle is also applied to the action of the dog grabbing a butterfly with the primary action of his arms. His hips and body are similar to the top pendulum, and his feet and tail are secondary to his hips, like the lower pendulum diagrams. This principle is also apparent in his head, which swings from his arms, and the ears pendulum from the head.



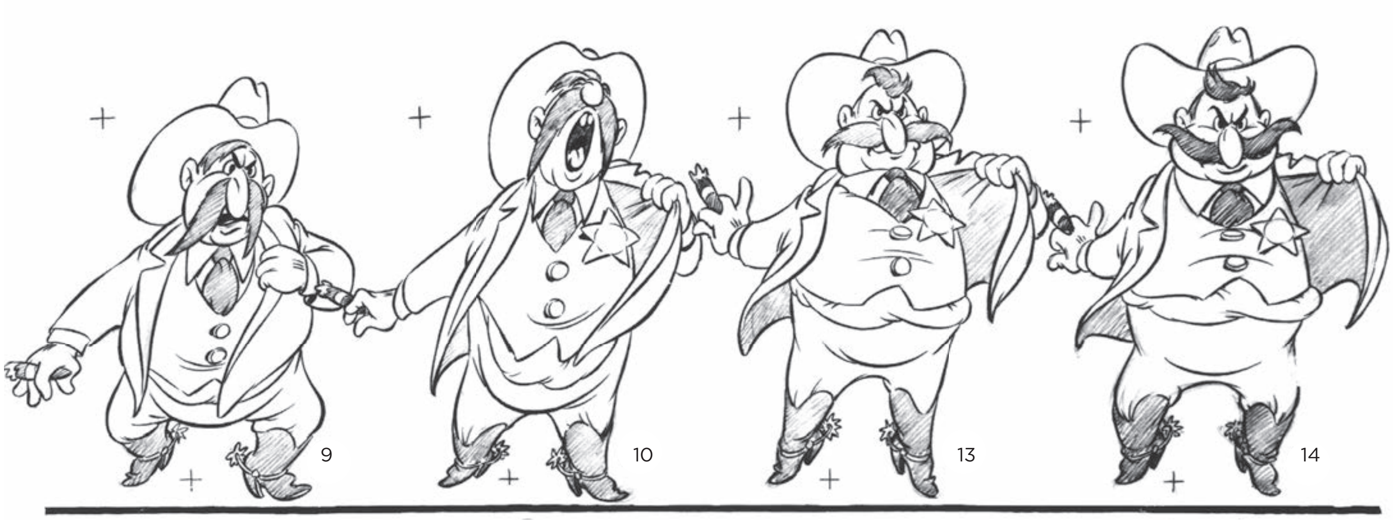
Study the delayed action of the squirrel's tail. With delayed secondary actions, always get a good follow-through on loose-moving secondary objects, such as coattails, hair, ears, and tails. In this squirrel action, the feet arrive in the final position first; then the body rises. After this, the arms may arrive, followed by the tail.

MULTIPLE TECHNIQUES

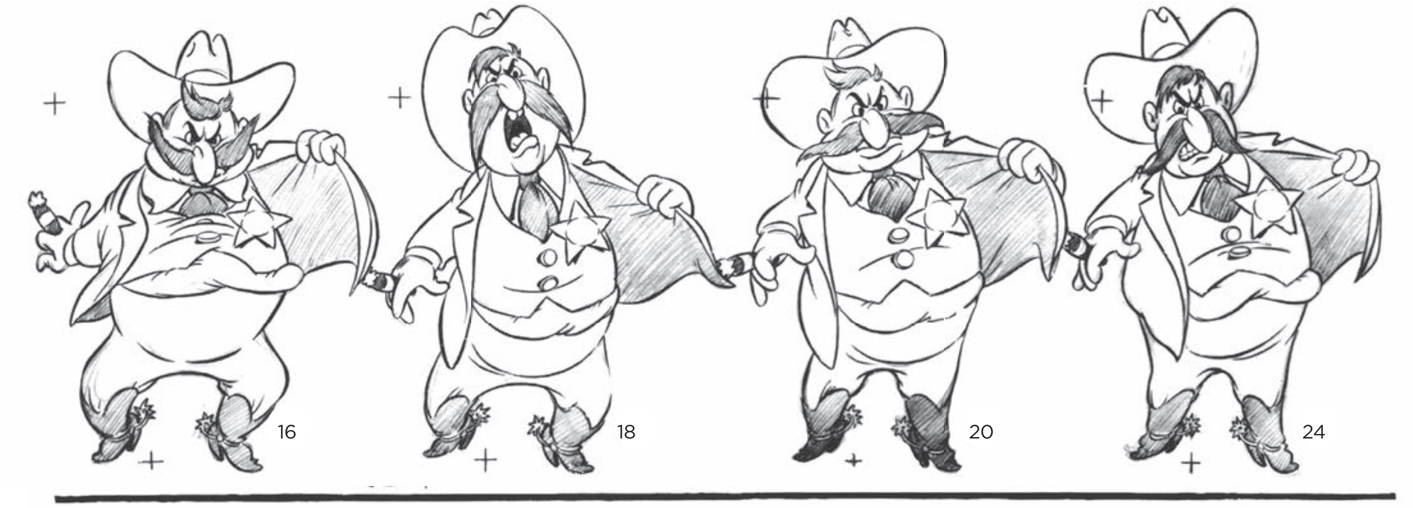
Here is an example of an animated character using three techniques: overlapping action, follow-through, and squash and stretch. Note: If you trace this character, remember that the crosses above and below each drawing are at a fixed point on the screen, so they should line up.



Squash & Stretch Notice steps 8 and 10. The proper use of squash and stretch will strengthen an action. It is essential in creating a feeling of weight in characters.



Follow-Through Study the ends of the coat. Put this type of follow-through action on all flexible, loosely waving objects; in a strict sense, any object that "gives" in animation has a certain amount of follow-through action.



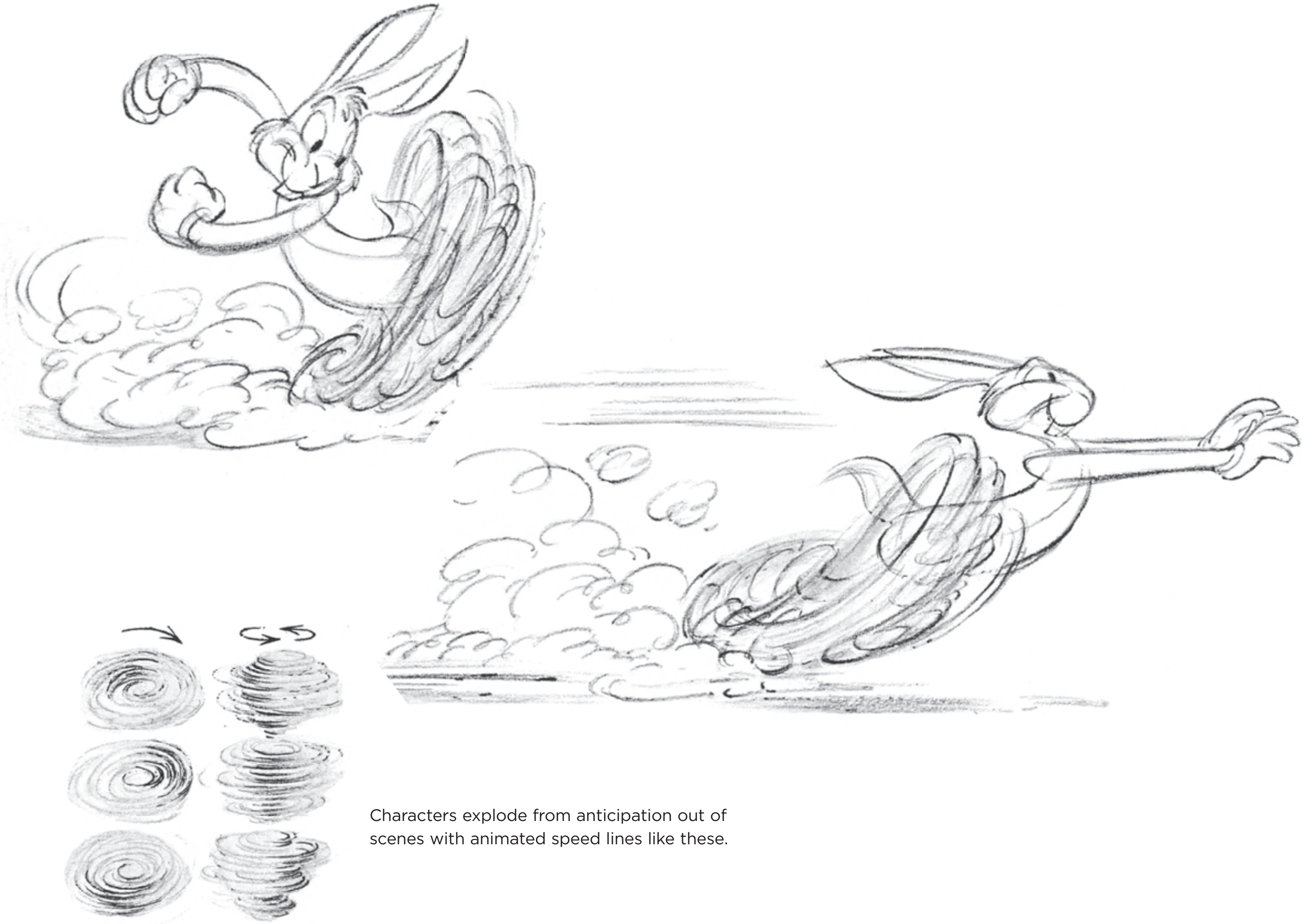
Overlapping Action The main action can be preceded and followed by lesser actions that relate to, or are the result of, the main action. In this example, the main action between steps 8 and 10 has caused an overlapping lesser action to occur from step 10 all the way to step 24.

ANIMATION EFFECTS

Many effects can be used during these movements to bring more life to your animated sequences. For example, blurring a character's legs during a run will convey fast action, and halting and jittering a pan shot after a character suggests that the character has run into an object.

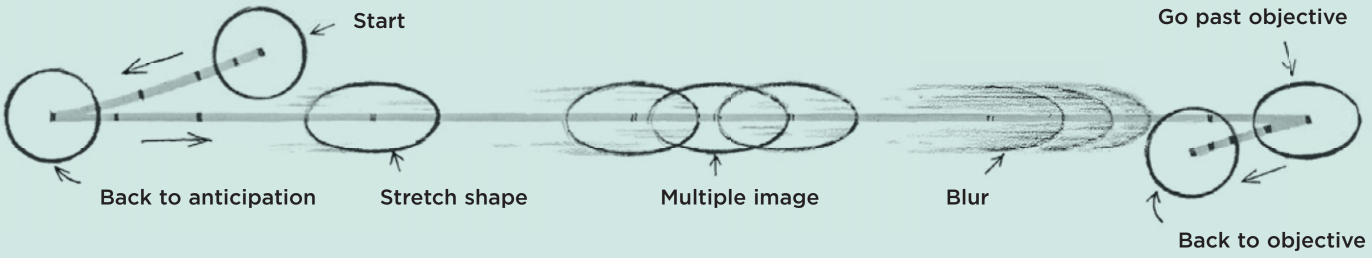
FAST ACTION BLUR

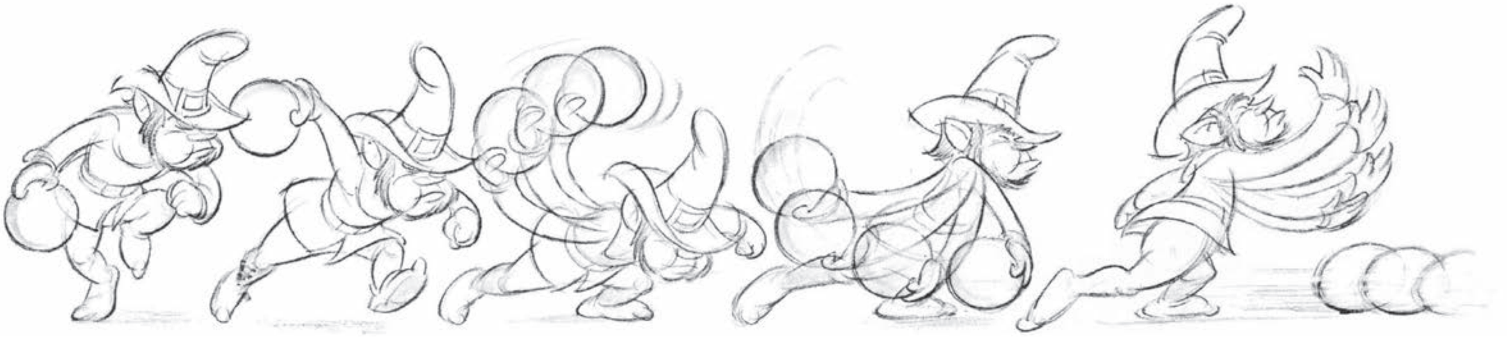
In fast action, as shown below, the character stretches, goes into a blur effect, disappears for a frame, and then reappears at the objective; multiple images can speed the action. The animated blur replaces leg action in a three- or four-drawing twirl, as shown.



Characters explode from anticipation out of scenes with animated speed lines like these.

Using a Speed Action Chart

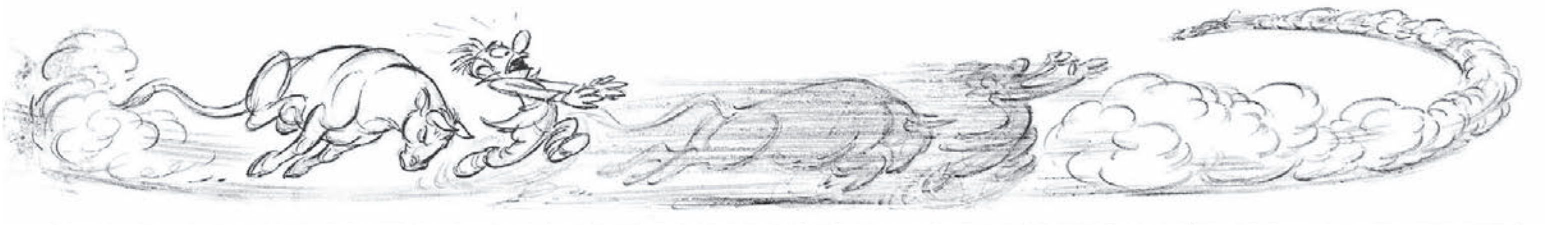

Start
Go past objective
Back to anticipation
Stretch shape
Multiple image
Blur
Back to objective



As shown in the elf above, multiple images of a fast-moving hand (or leg) carry the illusion of the movement better.

SPEED EFFECTS

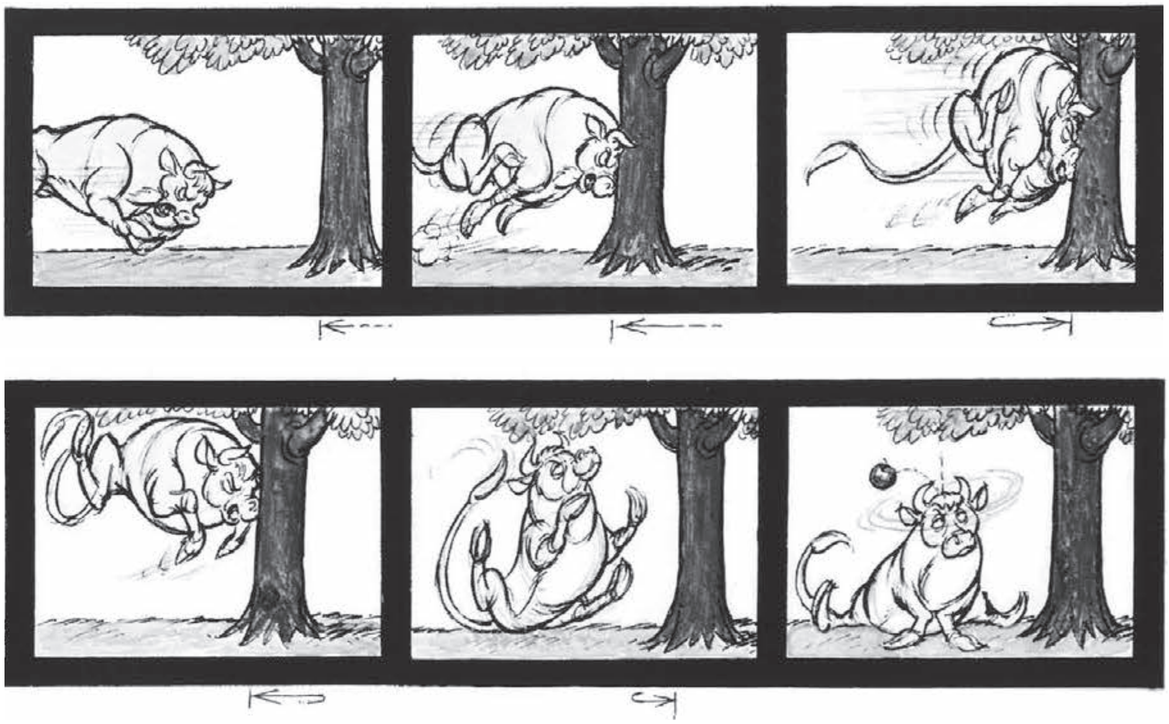
Clouds of dust and/or smoke are stirred up by the speed of the bull chase. Speed-line blur effects often follow, including fragments of double images. As such, speed goes through a quiet, still background, the grass and trees are sucked in the direction of the passing tornado. These special effects involve animated backgrounds.



IMPACT EFFECTS

As speed is abruptly halted, impact enhances the impression. As shown in the storyboard below, the bull collides with the tree on a fast-moving pan. The impact knocks the pan and tree slightly forward and then into a stop. Alternately, the pan action can be enlarged to a stagger/jitter action, or the bull can go into a stagger action after the impact.

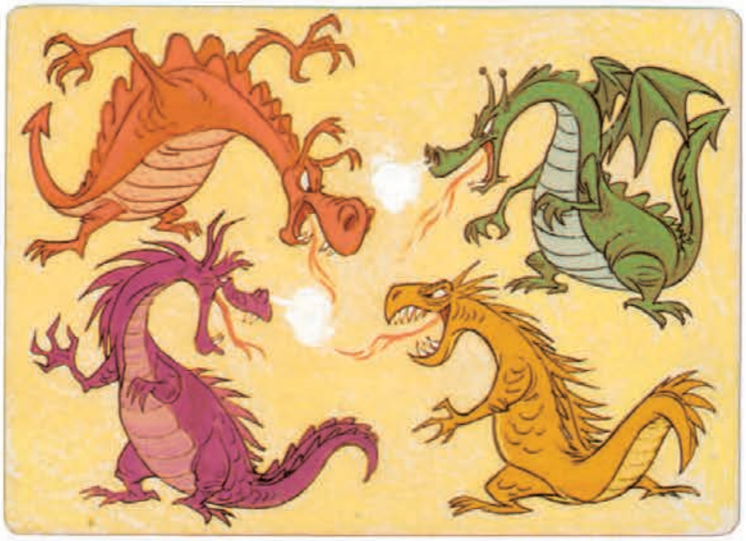
After a fast fall, the impact with the earth is usually handled with a vertical stagger/jitter of the background. However, classic impacts in great cartoons have also incorporated animated repercussion effects in the background—for example, distant rocks rising and falling from the shock waves. Other great impacts have animated craters and smoke.

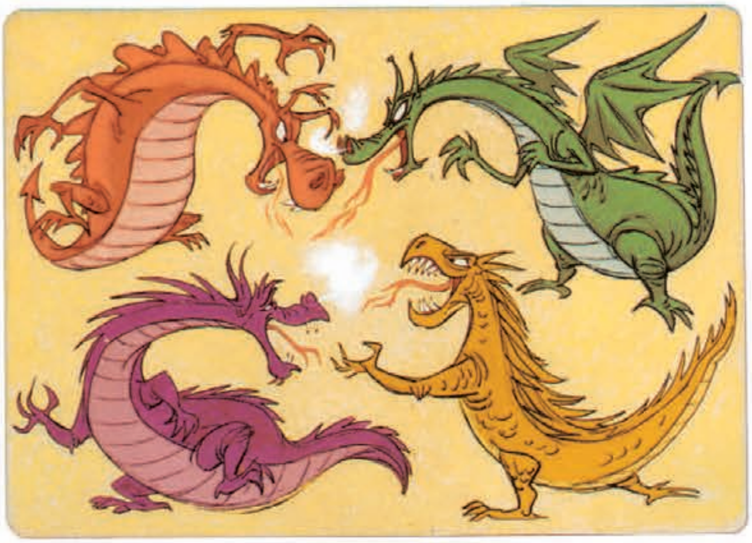


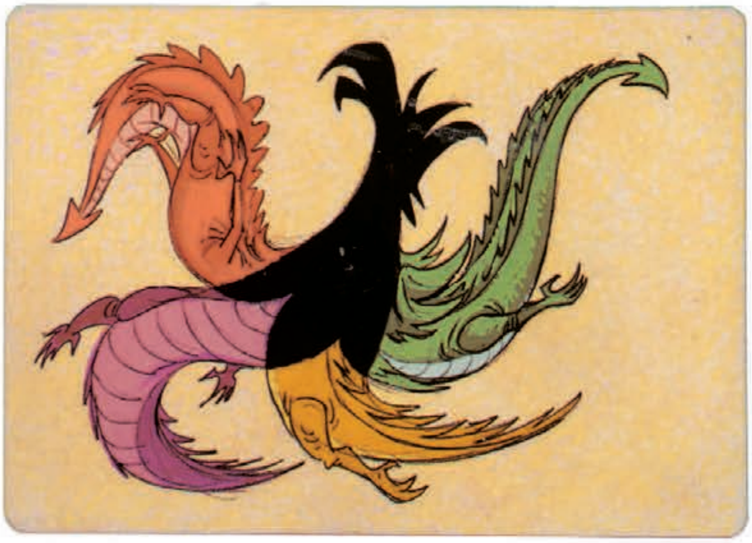
BACKGROUND CONTROL

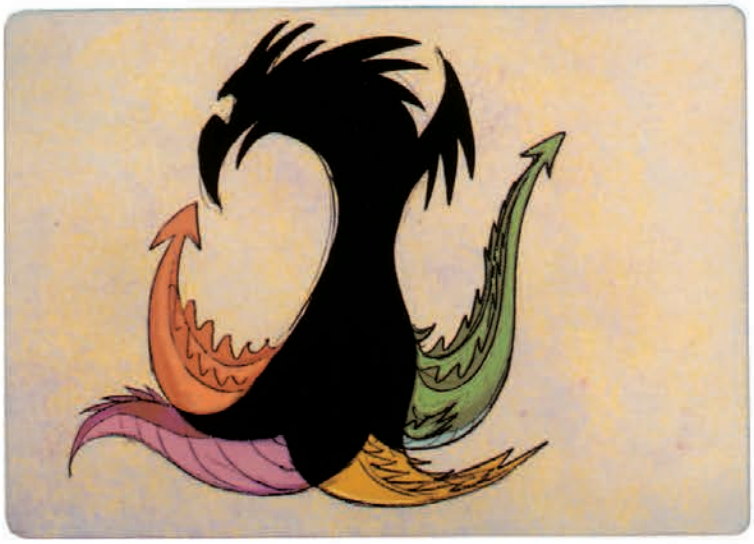
In this animation, pay attention not only to the character metamorphosis, but also the background cross-dissolve effect. The drama of metamorphosis (often called "morphing") is a valuable tool in animation. In this scene, metamorphosis is used in two ways:

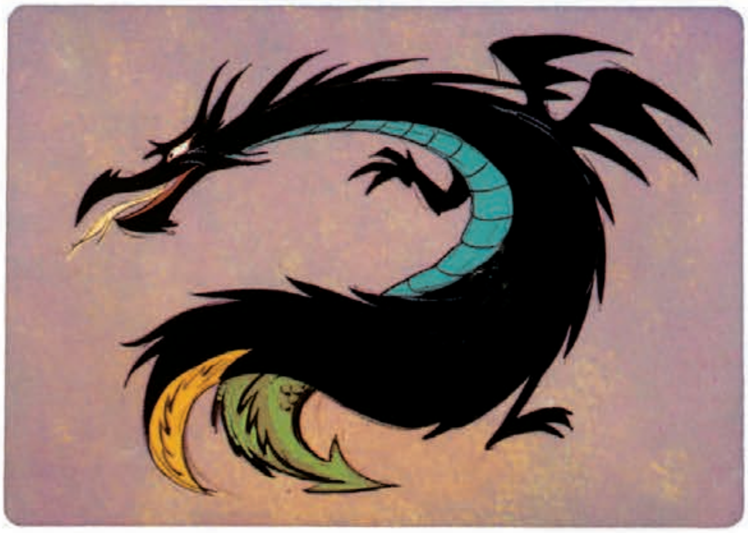
1. A special lighting effect known as "cross-dissolve" is used to change the background from light to dark.
2. The four dragons are "morphed" into a single fire-belching dragon monster. Study the changes shown in this sequence. When you use this technique, the action should flow gradually and smoothly.

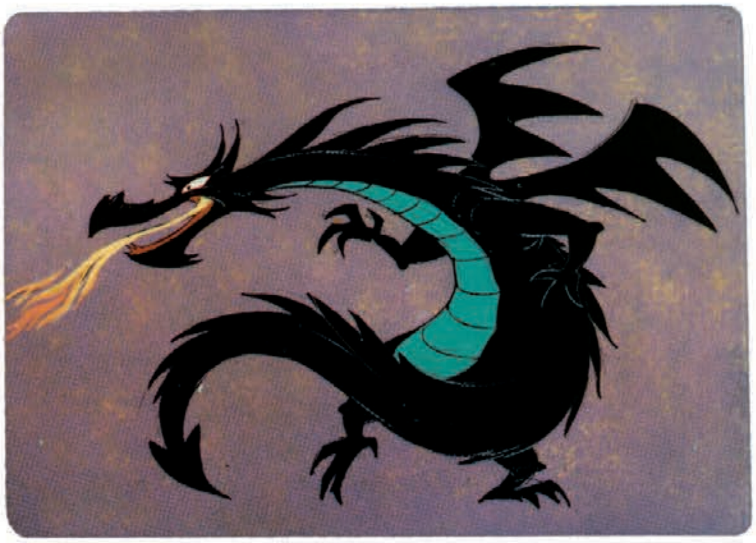


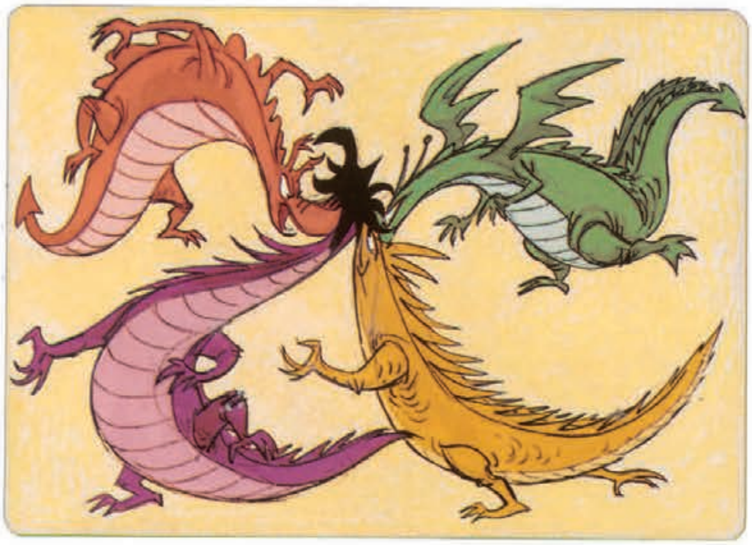


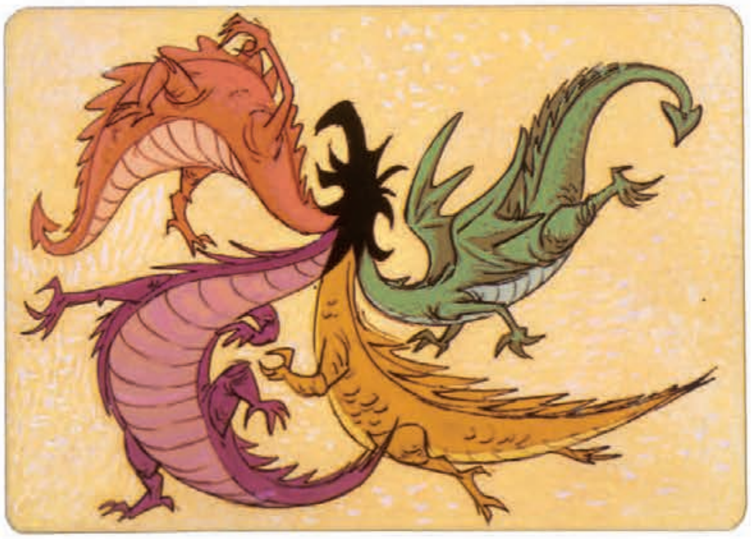


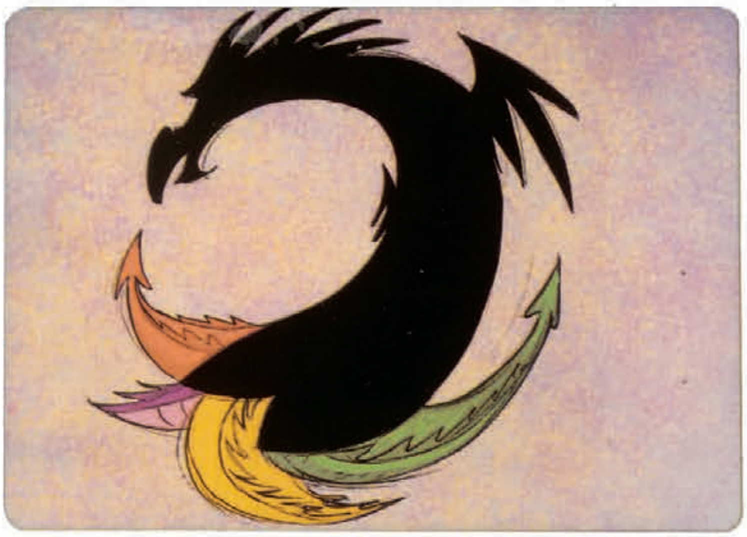


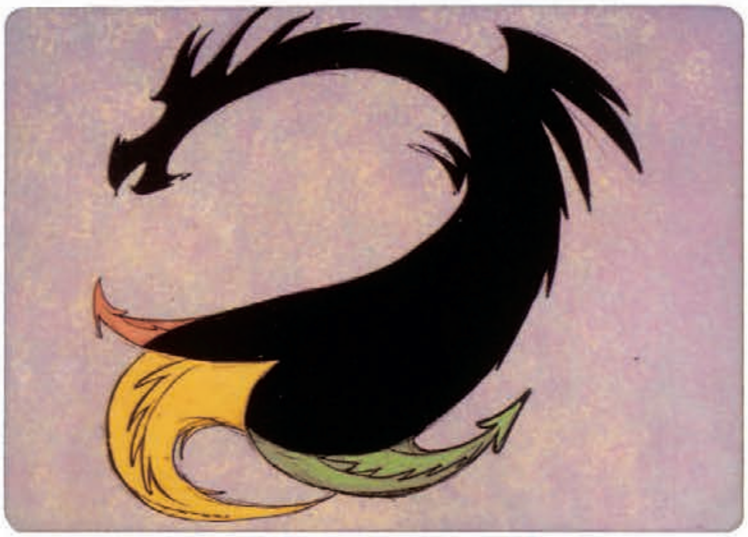


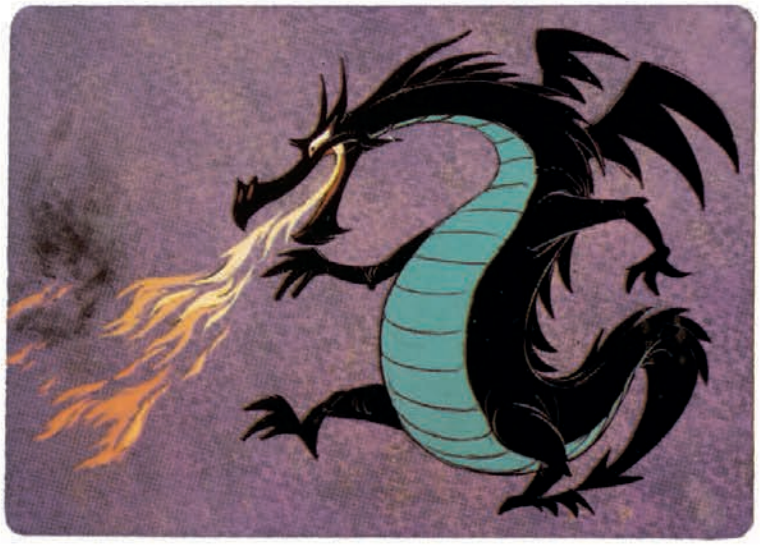


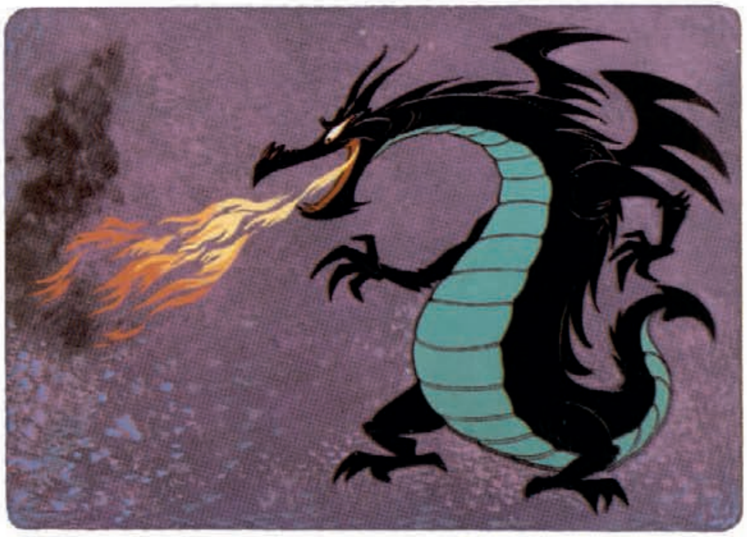


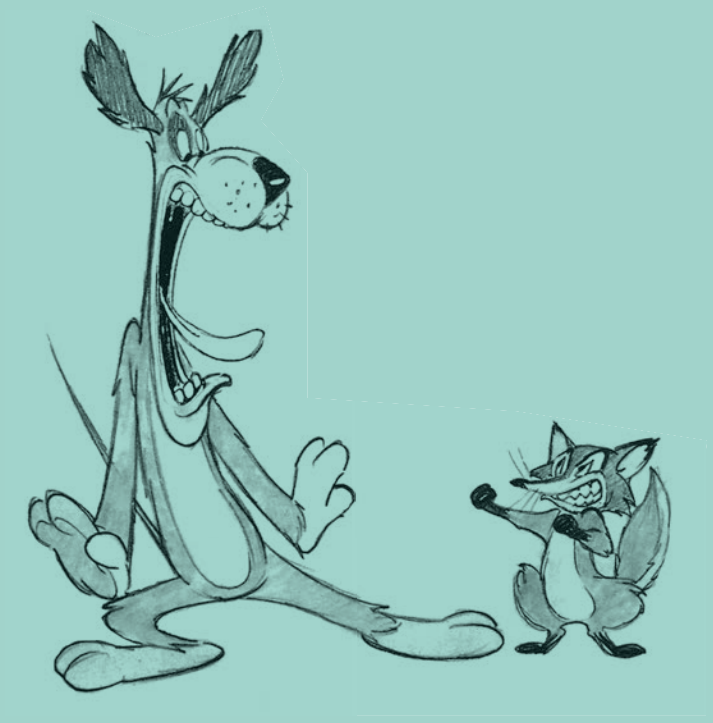


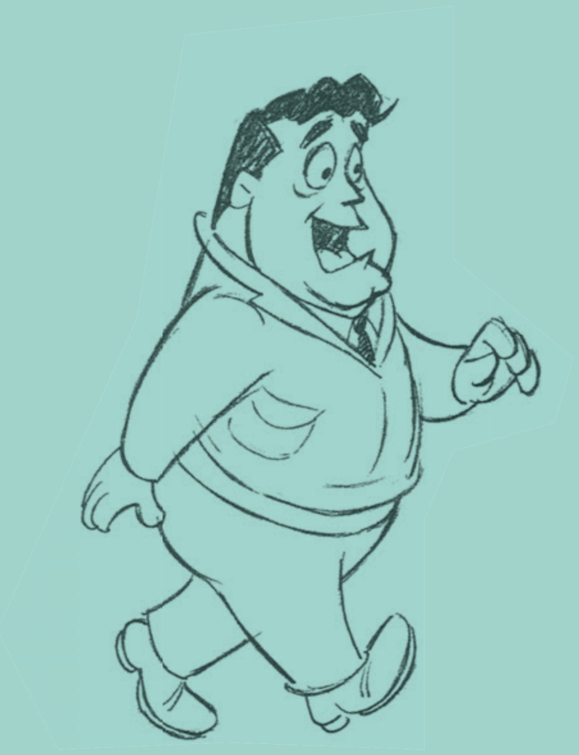


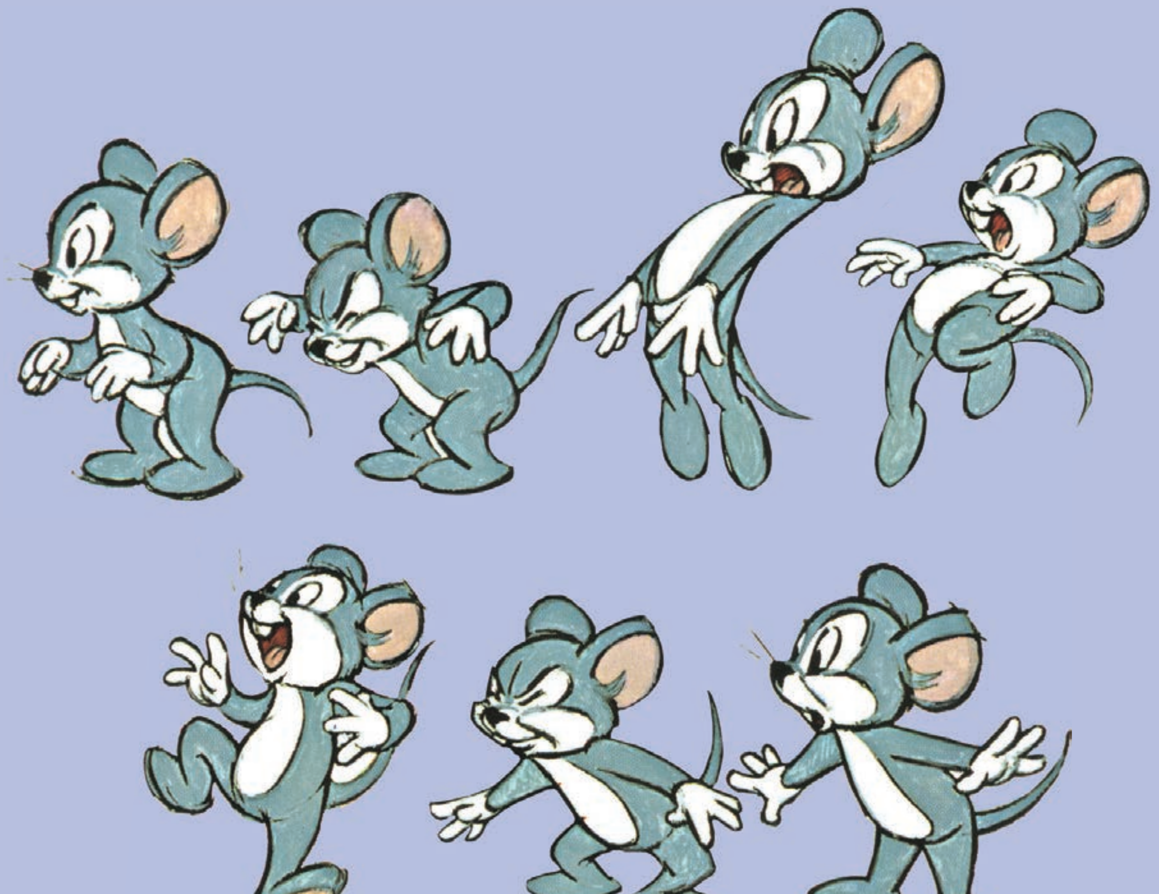




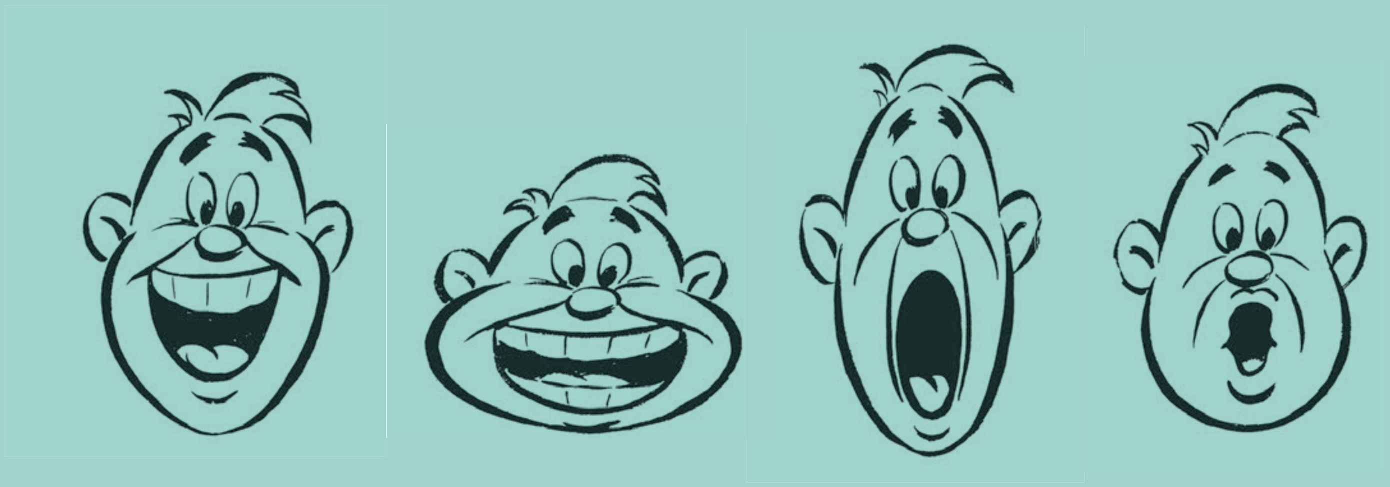




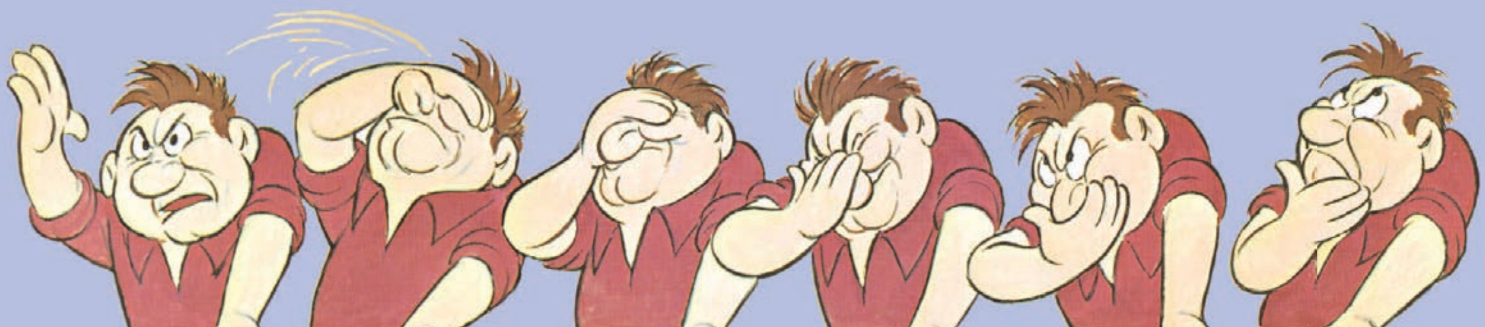




CHAPTER 6



ANIMATED ACTING

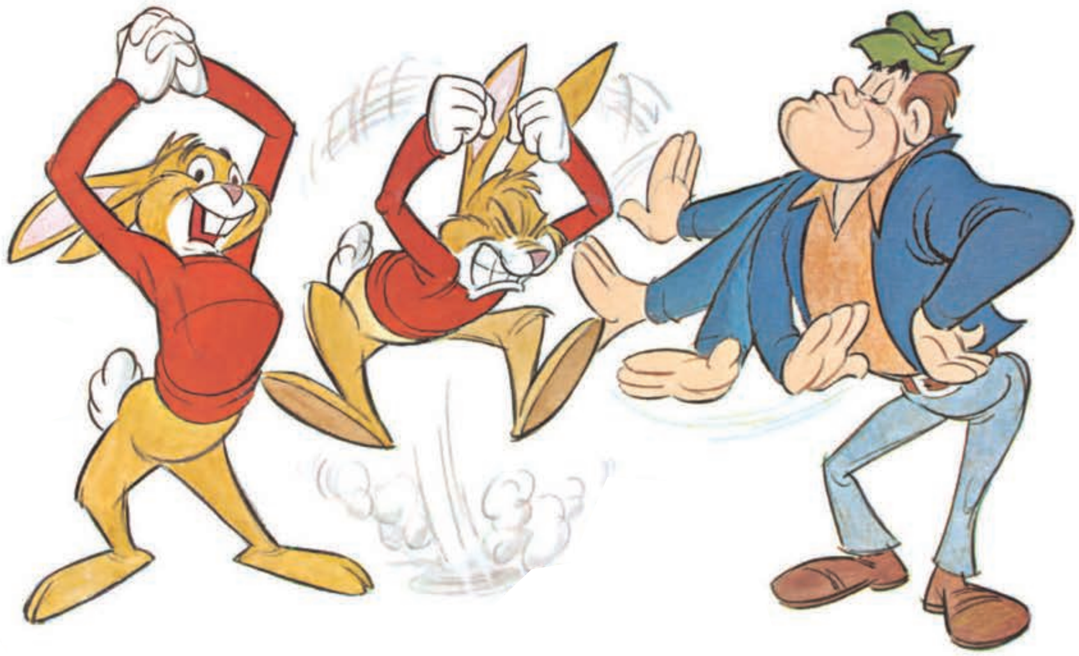


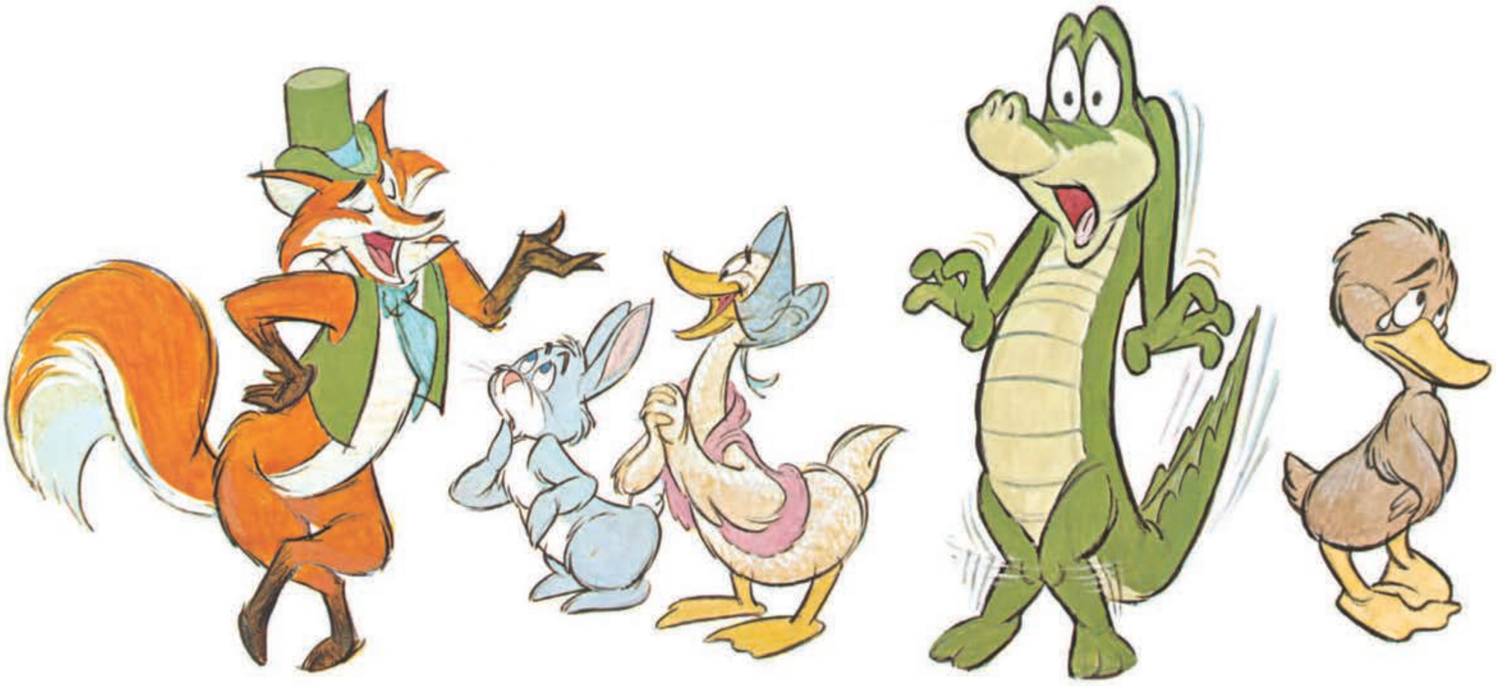
EXPRESSING AN ATTITUDE

Gesture, mannerisms, attitudes of posture, and outbursts are a language of animation that speaks emotions and reveals character through your drawings. As the art develops, the comic characters begin to "think" and assume predictable character—most of it hilarious. However, in many animated films, the animated art has moved people to tears. In these cases, the animator has become a "real" actor.

THREE RULES FOR ACTORS

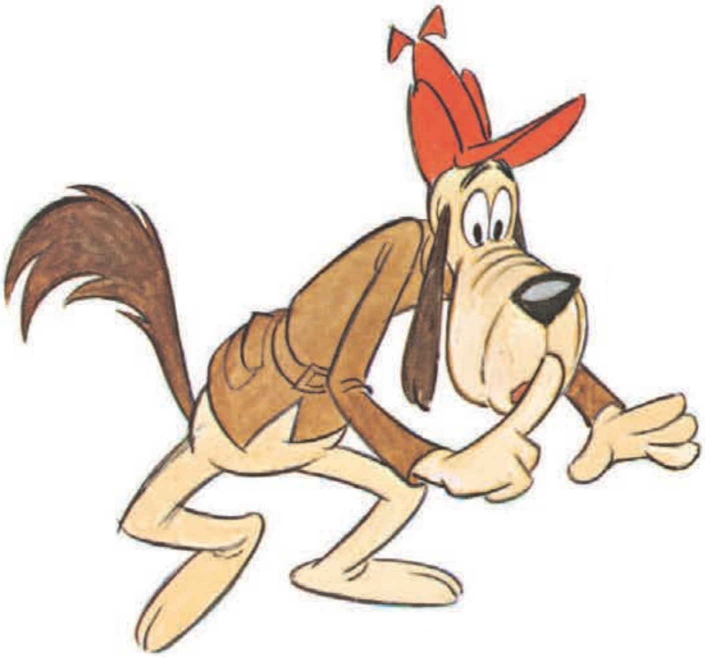
Here are some rules for cartoon actors: 1) never move or "freeze" without meaning, 2) hold a gesture as long as possible to let it register and sink in, and 3) don't over-gesture. Bonus! Make everything work for you: ears, tail, hair, legs, feet, clothing, etc.

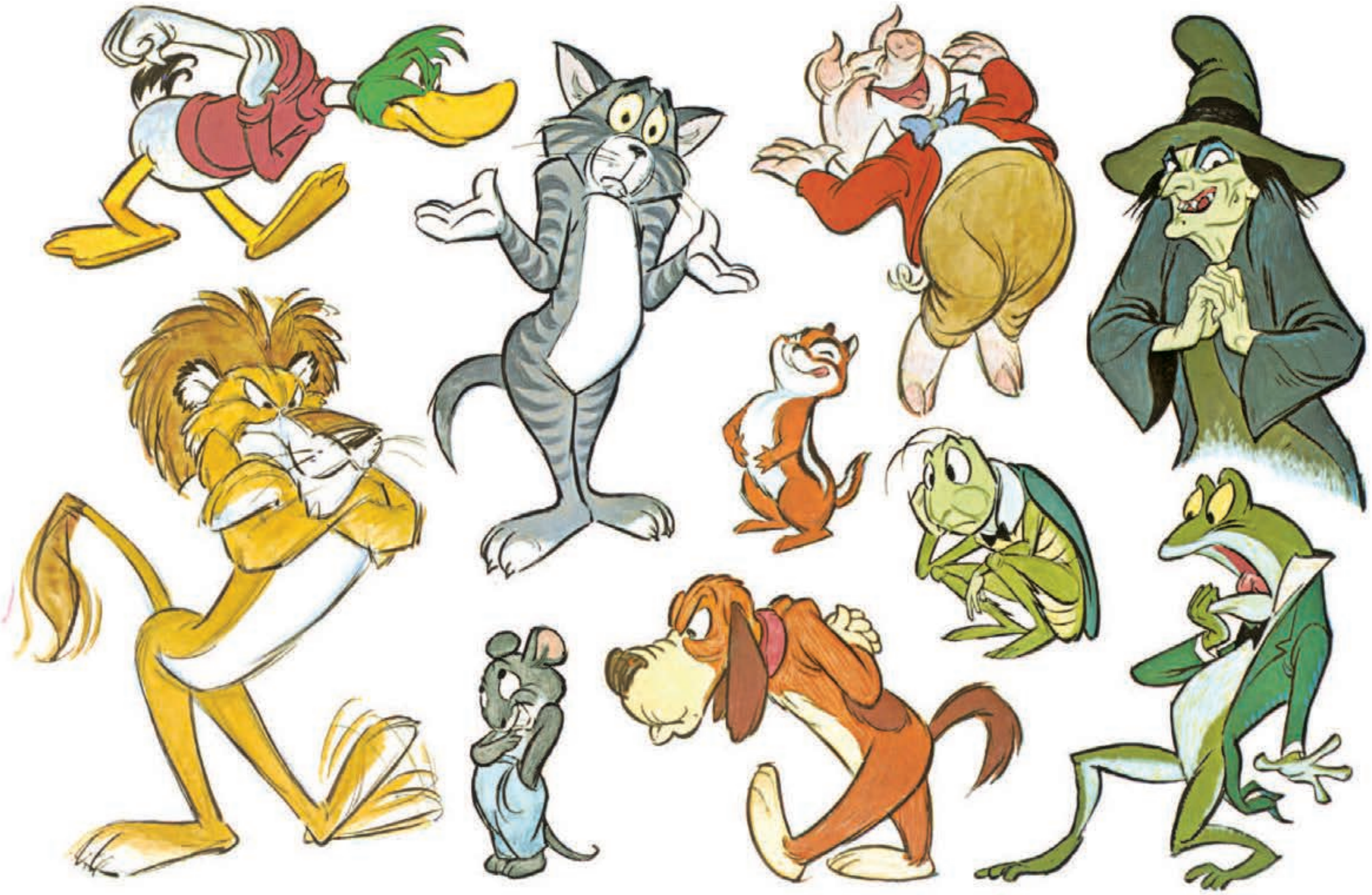




Trying a Short Animation

Practice animating this dog in action. First make a few thumbnail sketches and a short script. The dog sneaks in and stops in forward crouch; the big eyes look from side to side, and the body becomes erect; the hand follows through slowly to lips to show conspiracy; it moves into pose slowly, and then the ears and tail overlap in pose. How does your animation look?





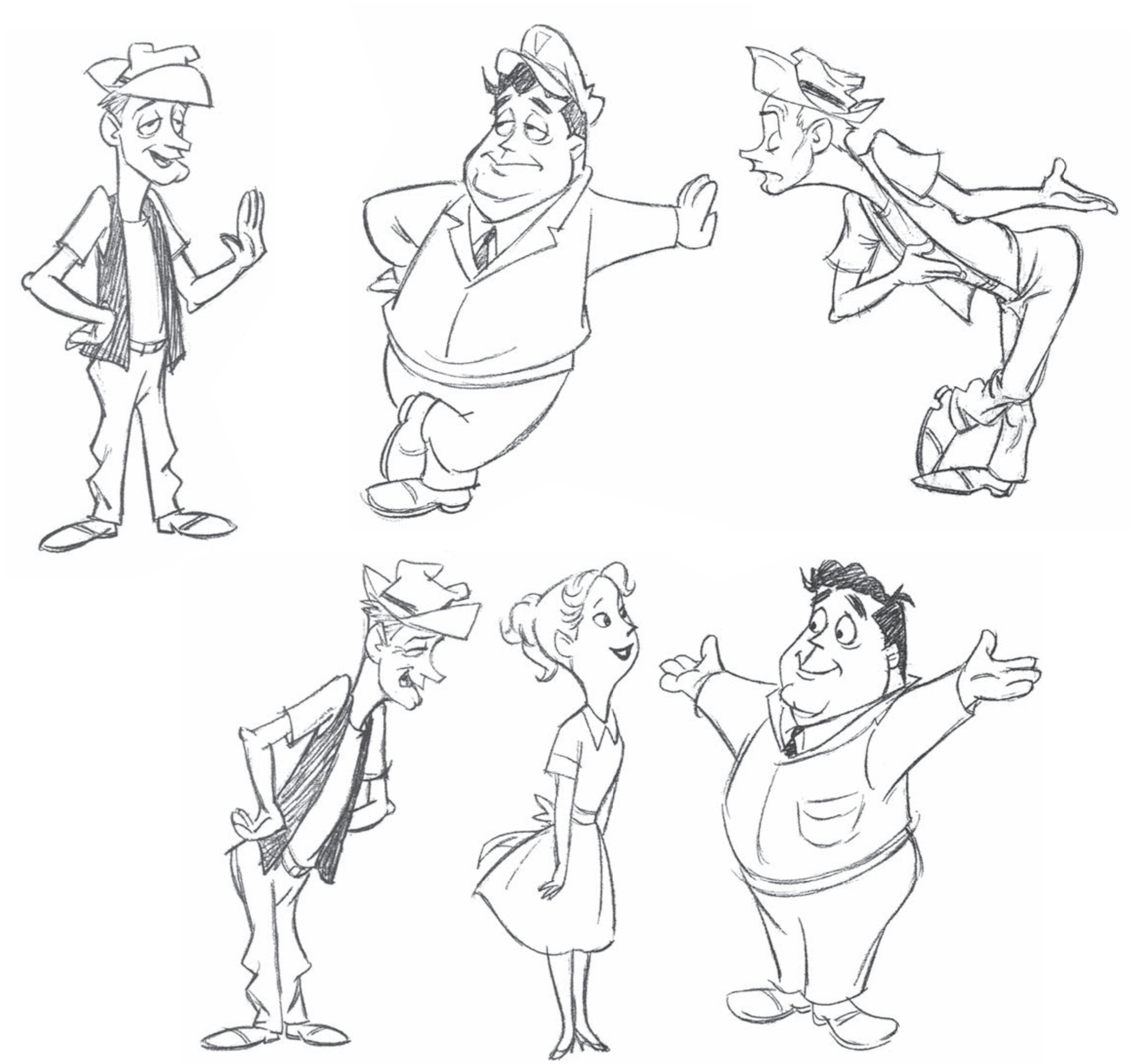
Body language Make a collection of body gesture cartoons and photos. Animation is a calculated spacing of cartoons that can bring gestures like these to life.

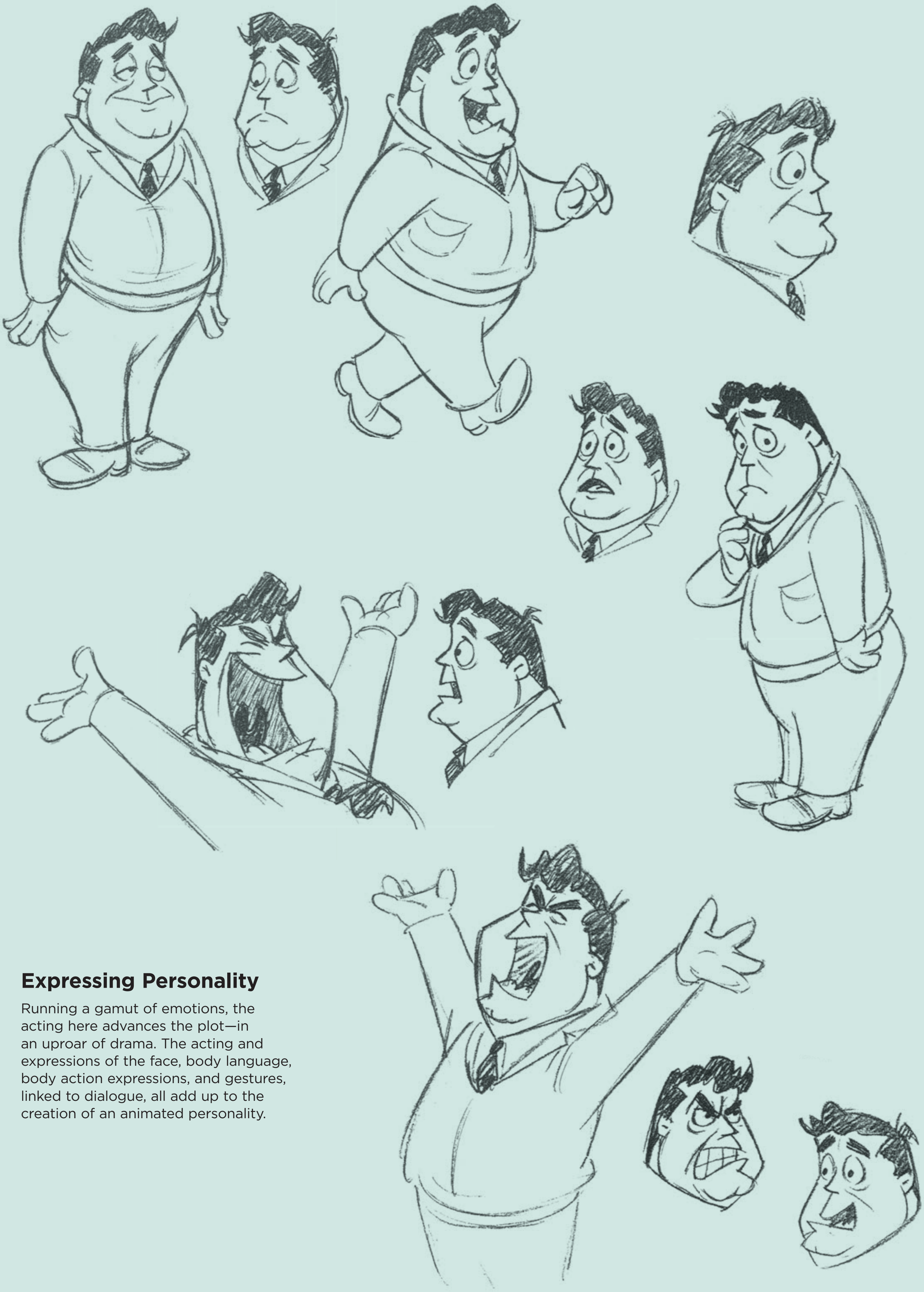
BODY LANGUAGE

When an animated character speaks, it must also act with corresponding body language to be convincing. Show the actions of the characters as they react to the unfolding drama. Even when they are not speaking, they must react to the scene around them with the appropriate facial expressions and body language.

This is a model sheet for a proposed animated series of *The Honeymooners*. The drawings define the range of body language expressions that were the repertoire of the original actors. These actions reinforced the dialogue script, which is what made the TV series so funny and entertaining.

The animator can make a character appear to "think" by using these facial expressions, and nothing is more fascinating than to see the "wheels go 'round" in the mind of an animated character.



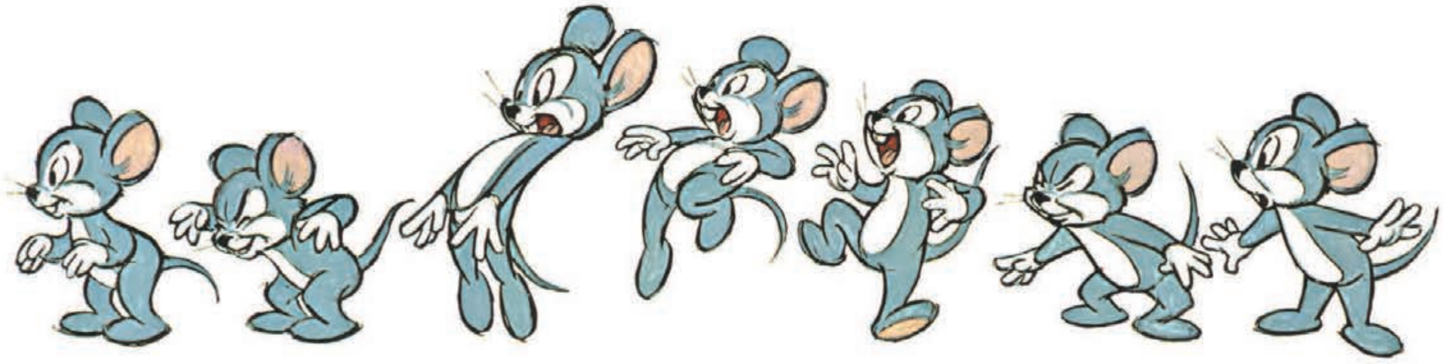


Expressing Personality

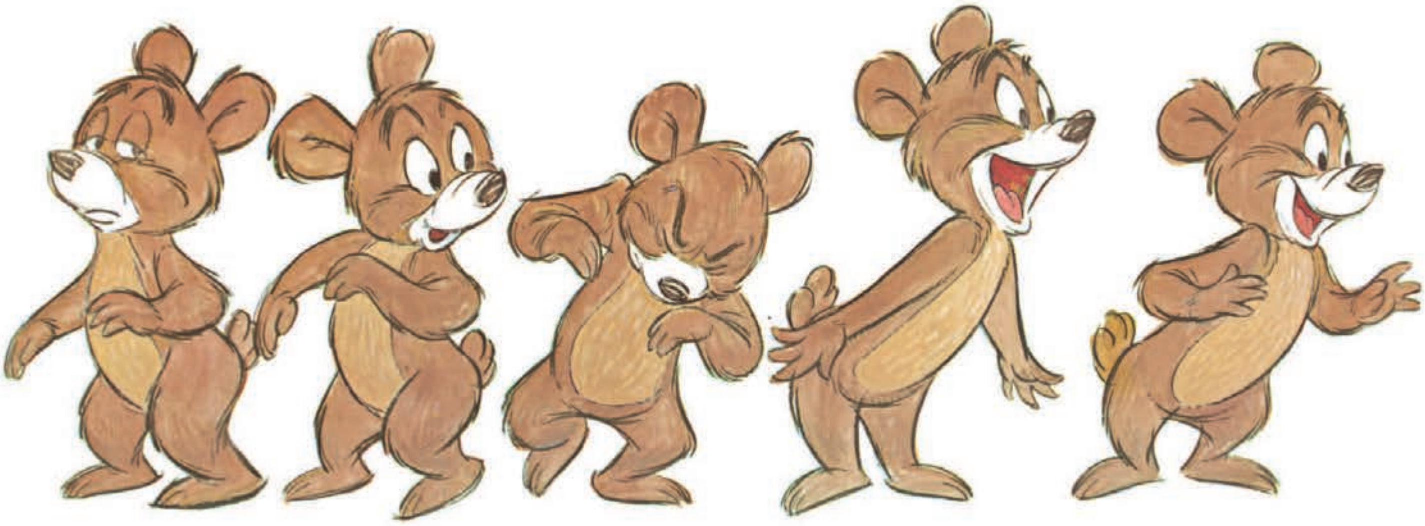
Running a gamut of emotions, the acting here advances the plot—in an uproar of drama. The acting and expressions of the face, body language, body action expressions, and gestures, linked to dialogue, all add up to the creation of an animated personality.

GESTURES

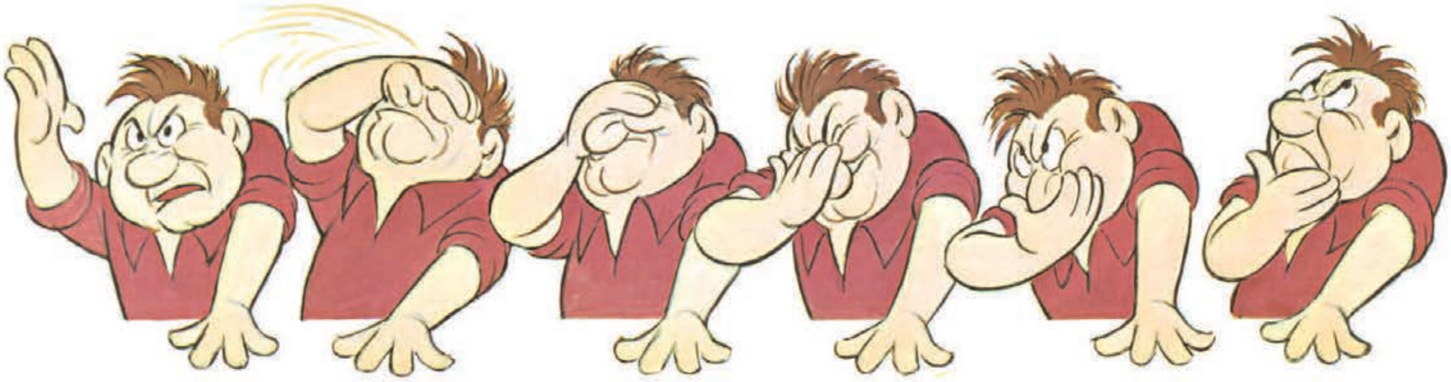
Each of these gestures requires 1) related animation acting into the pose, 2) overlapping action into and out of the pose, and 3) the subtle animation of the pose, or a "freeze" with dramatic meaning. When animating, never go to a place all at once unless there's a reason (which isn't often). Here are three classic animation patterns: the mouse "take" into pose, the bear "double-take" into pose, and one version of the great "slow burn" (the man below). When animating gestures, start with the emotion—get into character and act it out—and then sketch the sweep of the body, arms, legs, and head. Explore every tilt and turn of the head and the expressive hands.



In this "take," the mouse sinks into an anticipation crouch or contraction that is always brief, and then springs into the stretch expansion (also brief), and then in a scramble reverts to normal-size look. This animation reaction has wide use in many forms. It can be reversed with the stretch first, and then into look.

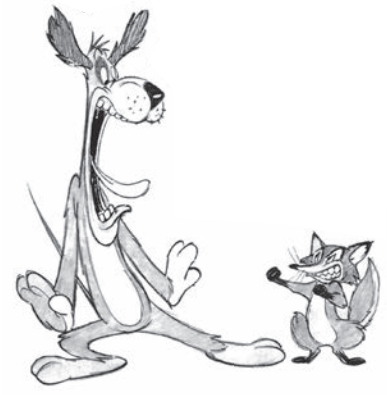


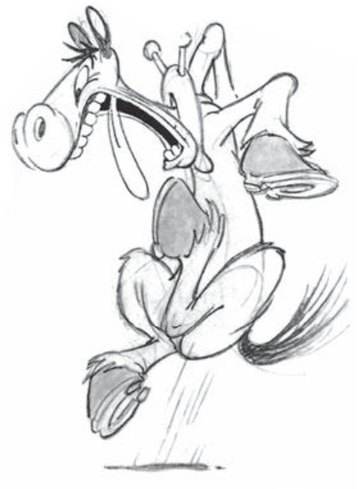
Actions have drawings like the second bear above and the second drawing of the man below, that need to be held or prolonged with close adjacent drawings. The bear could blink, and the man could slowly move further back.

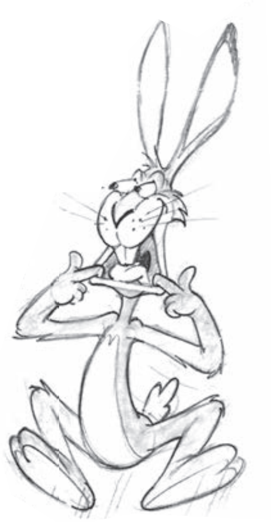


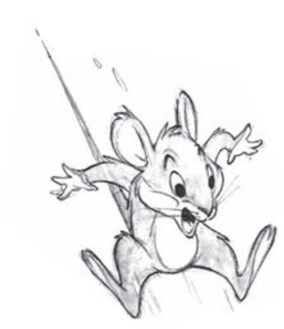
THE CARTOON "TAKE"

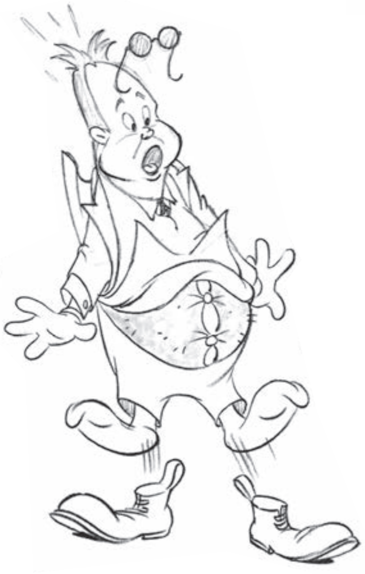
Almost anything can happen in a take: the figure may stagger or fly through the air, the eyes may pop out, or hair, coattails, etc., may fly up and contribute to the surprise effect.

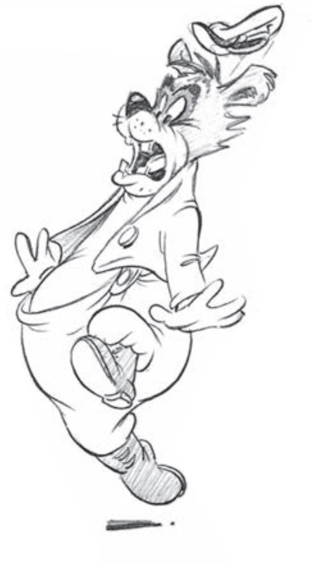


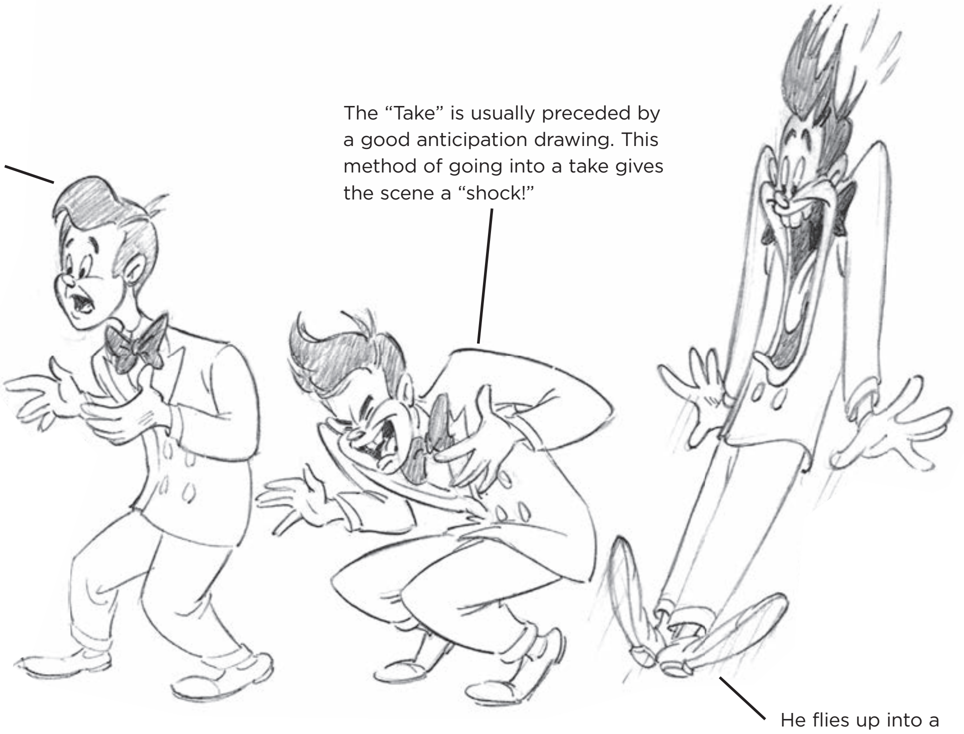












The character sees something surprising.

The "Take" is usually preceded by a good anticipation drawing. This method of going into a take gives the scene a "shock!"

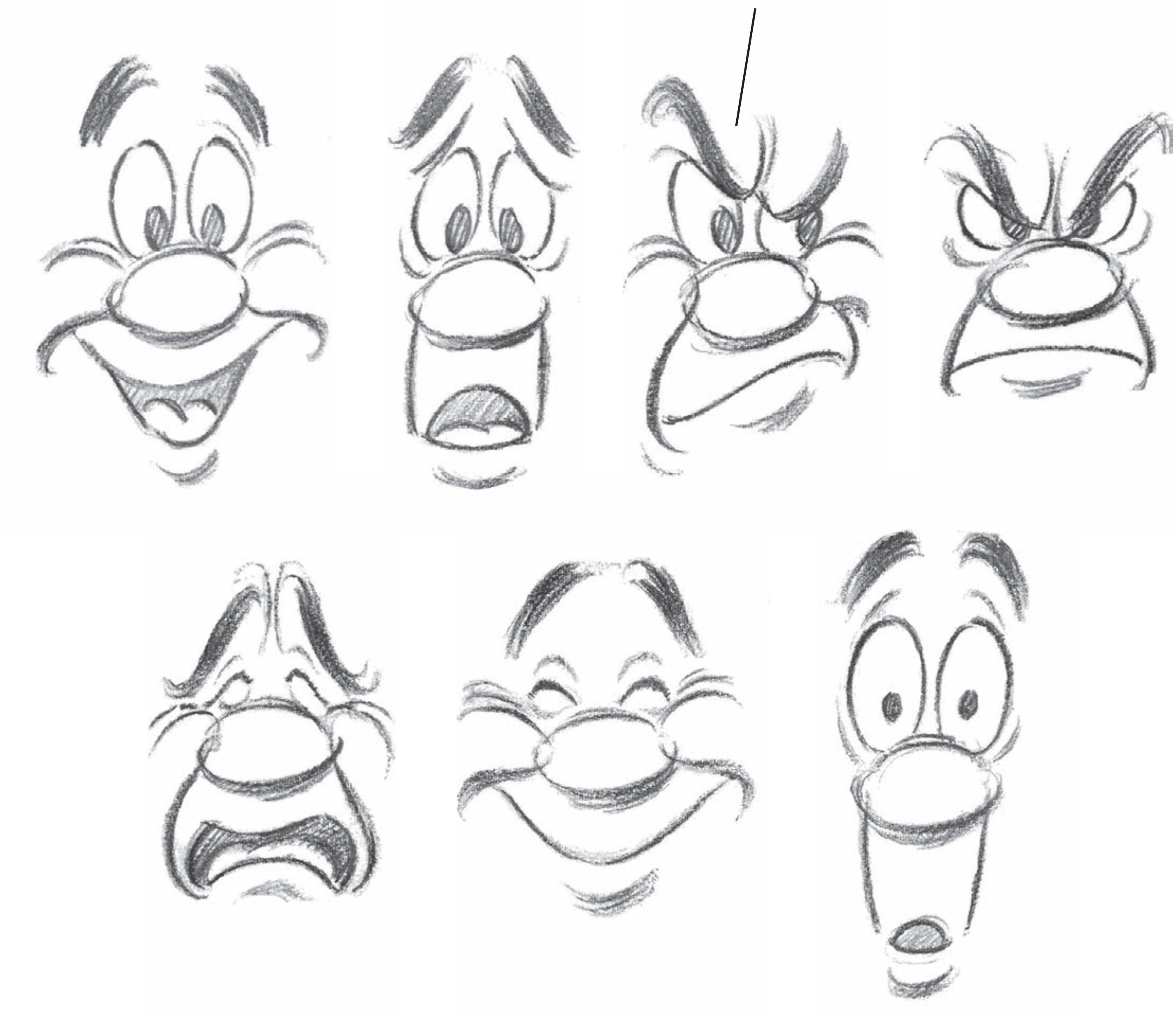
He flies up into a wild take.

DIALOGUE

Dialogue, mouth movements, body movements, and facial expressions all work together to portray the correct animation of the character. Although it is interesting when your cartoon character simply walks across the screen, making it speak with the proper mouth movements and adding the gestures that go along with them turn the character into an actor with a distinctive personality. This is when the real excitement of animation begins.

FACIAL EXPRESSIONS

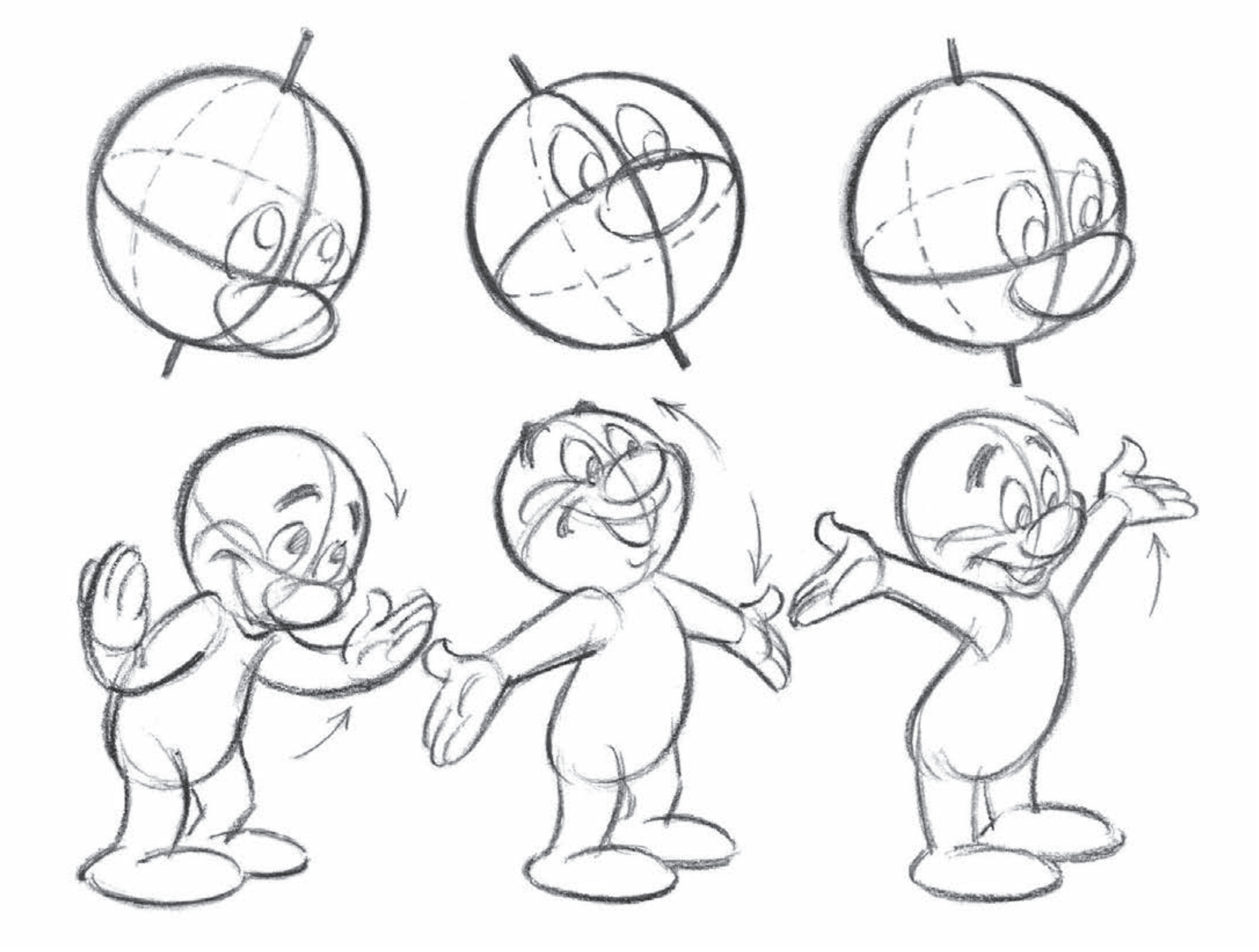
An actor/animator has an enormous range of facial expressions. Study your expressions in a mirror so you are better able to draw them. Every expression is based on four factors: the eyebrows, the eyes, the eyelids, and the mouth/cheek area. Overlapping action of the four factors can improve many actions. For example, an eye blinks (contracts), opens wide (expands), and then goes into normal pose, followed in an overlapping action by the eyebrows and then the mouth/cheek expressions. The face is a continuous overlapping action of contraction and expansion. Make a recording of some dialogue; then play it when animating. Mouth and act out each phrase and sentence many times in front of a mirror before drawing the act.

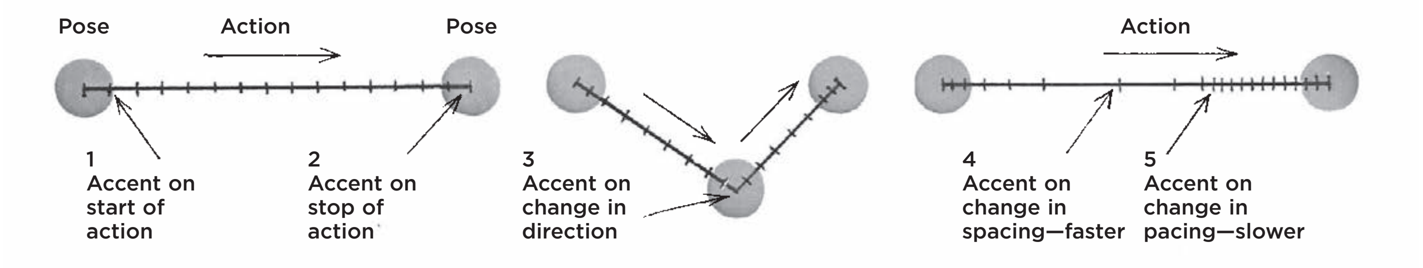


Many expressions are not symmetrical, but they don't have to be. An asymmetrical expression can change your animation to a nonsymmetrical look with dramatic effect.

HEAD TILT

In addition to the facial features, the tilt angle at which the head is held, the direction the character is looking, and the movement of the head in relation to the body all help to create expression. As shown, when the hands and arms gesture the dialogue, the head tilts to balance these moves in the opposite direction below. This results in an overlapping action and follow-through that can improve many dialogue actions. The action below could be saying the dialogue on page 124. You fit it: A to B is “All of the boys,” and B to C is “caught a fish.” B is a pose accent for “boys,” and C and spacing accents are “fish.”



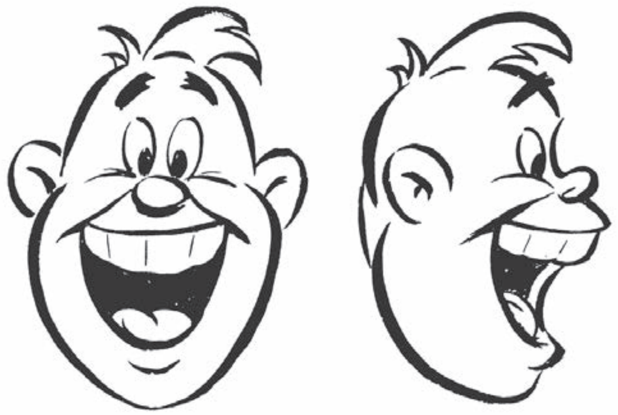

Pose
Action
Pose
Action
1
Accent on
start of
action
2
Accent on
stop of
action
3
Accent on
change in
direction
4
Accent on
change in
spacing—faster
5
Accent on
change in
pacing—slower

An accent in dialogue action can occur at an action start or stop, any change in spacing, or any change in direction. Accent the start of phrases of dialogue as well as the loud sounds in the track. Divide the dialogue into phrases of action and expression. Often, one facial expression should dominate an entire scene to effectively advance the plot and say more than the mere words.

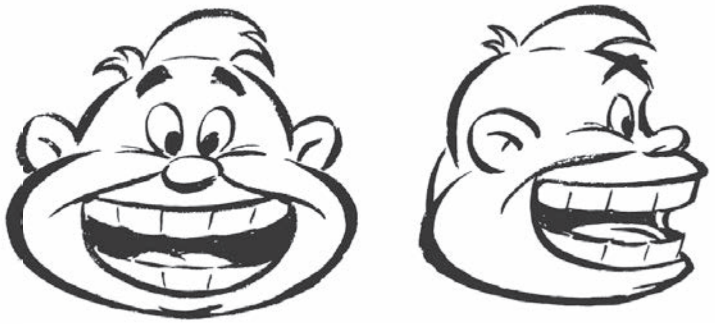
MOUTH MOVEMENTS

The main mouth expressions used in dialogue are illustrated below. The face is an elastic mass that can be squashed or stretched to fit the mouth expressions. This creates a good contrast between positions, which helps your animation.

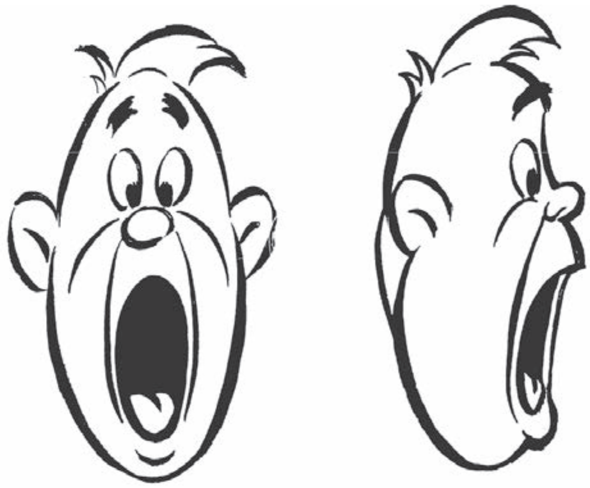
The Vowels



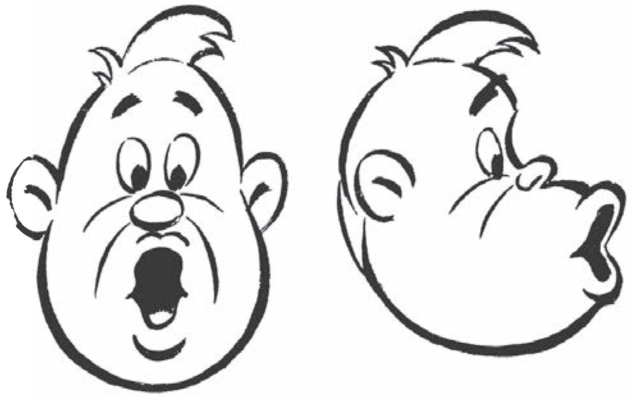
A and I



E



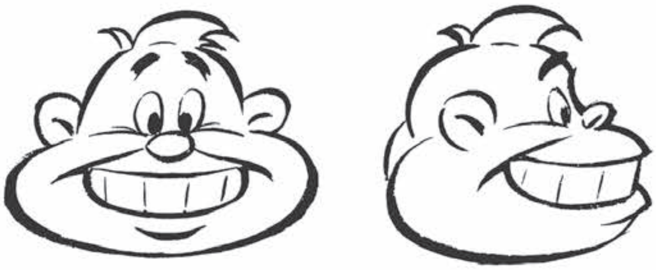
O



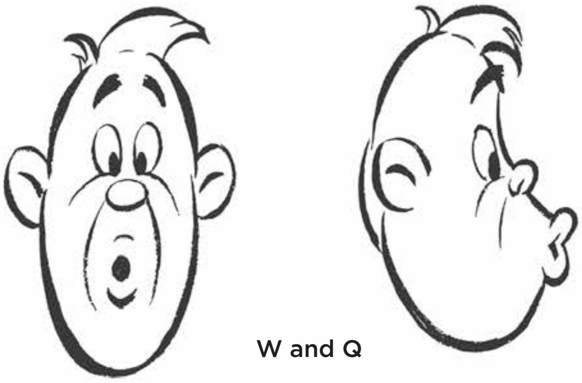
U

When animating a group of words, study the words as they sound when they are spoken quickly. It is best to follow an overall mouth pattern, repressing or modifying individual syllables that are not important to the whole.

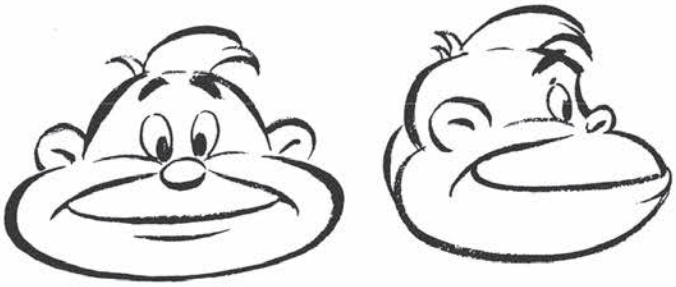
The Consonants



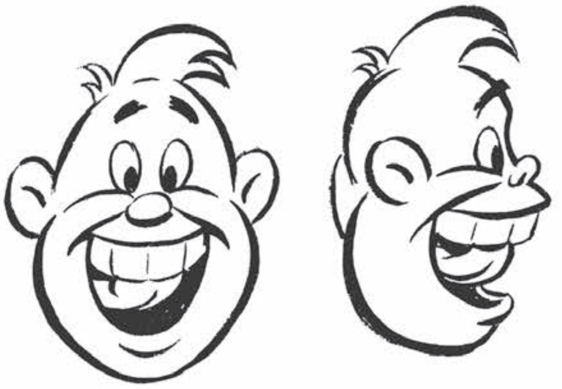
C, D, G, K, N, R, S, T, Y, and Z



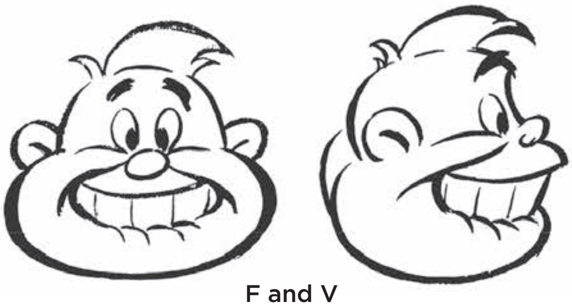
W and Q



M, B, and P

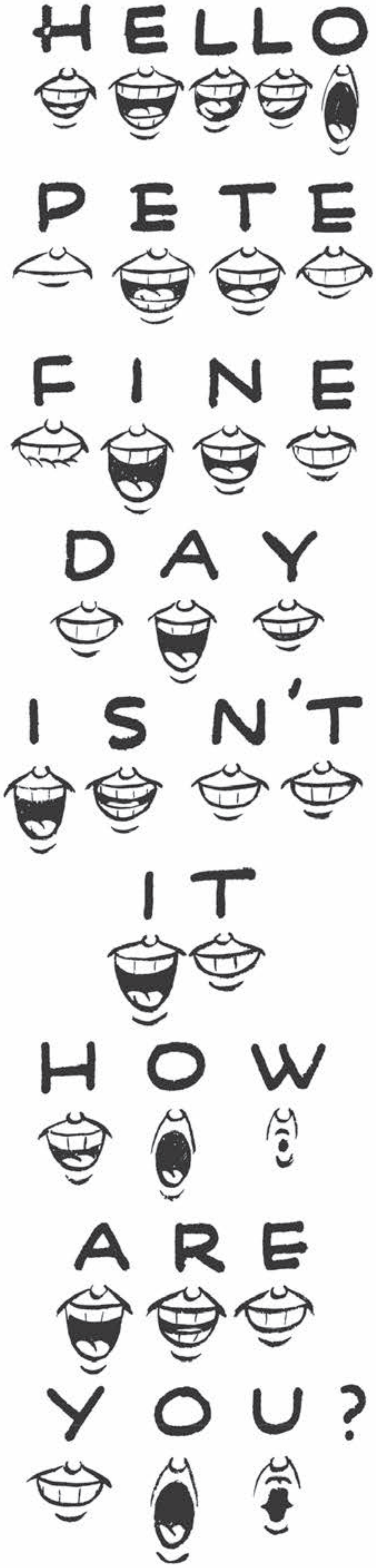


L (sometimes like D or TH)



F and V
(sometimes like D or TH)

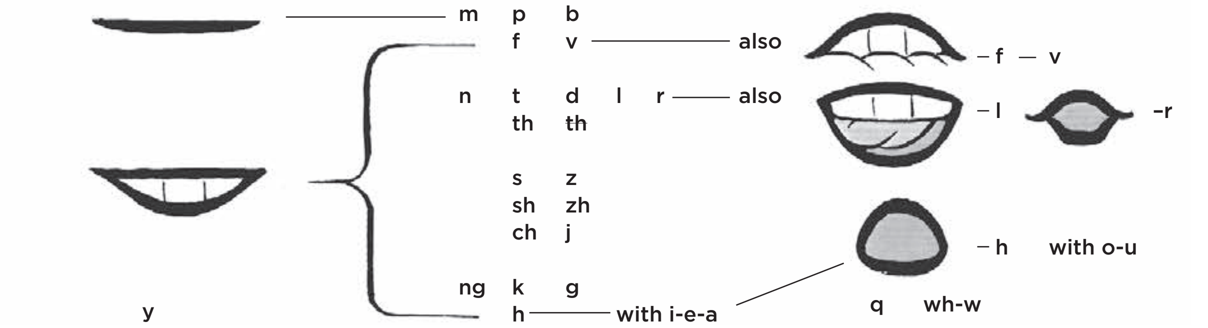
Study yourself in a mirror as you speak the words you are animating. Pronounce the words distinctly, and the correct mouth positions will be apparent.


HELLO
PETE
FINE
DAY
ISN'T
IT
HOW
ARE
YOU?

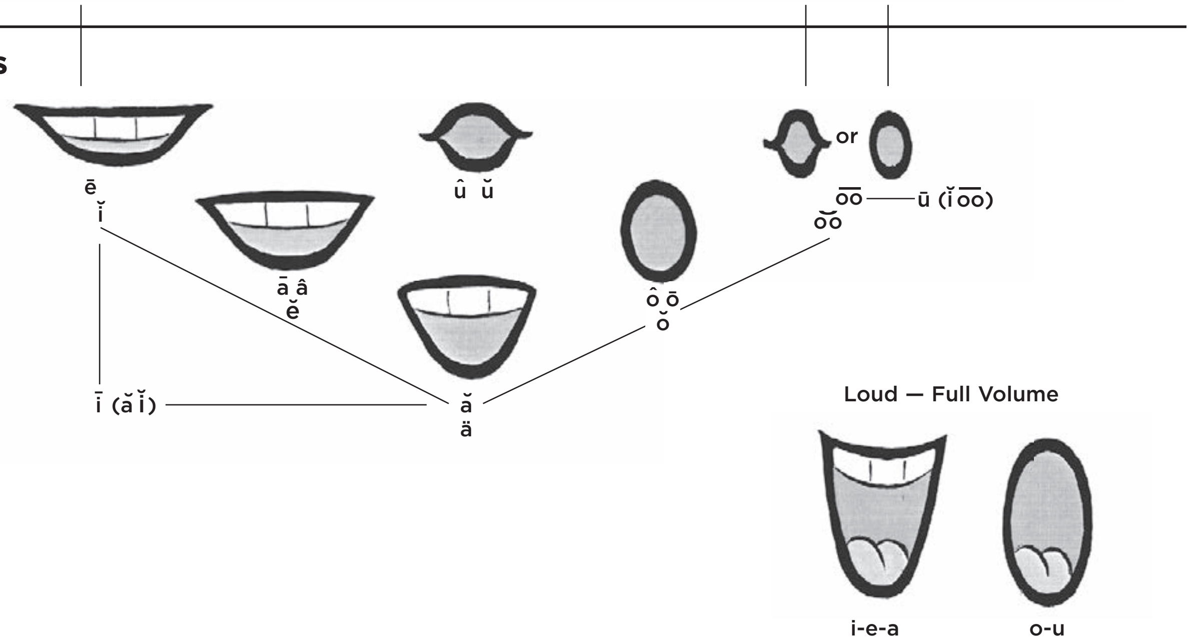
PRONUNCIATION

The animator creates an illusion of speech—or a believable image that is based on reality. An animator analyzes real mouth action from phonetic science, the pronunciation guides in the dictionary, and his or her own mouth action. By paying close attention to these studies of consonant sounds, vowel sounds, and diphthong vowel sounds, you can make your character say anything you wish.

The Consonants


m p b
f v
also
– f – v
n t d l r
th th
also
– l
–r
s z
sh zh
ch j
– h
with o-u
ng k g
h
with i-e-a
y
q
wh-w

The Vowels


ē
ĭ
û ŭ
or
o͞o
ū (ĭ o͞o)
o͝o
ā â
ĕ
ô ō
ŏ
ī (ă ĭ)
ă
ä
Loud — Full Volume
i-e-a
o-u

Webster Pronunciation Symbols

ôl äv thĕ boiz kôt ă fĭsh

English

All of the boys caught a fish.

Animated Mouth Arrangement

th k

ô-l-ä-v-ĕ-b-o-iz-ôăĕĭf/ĕĭsh

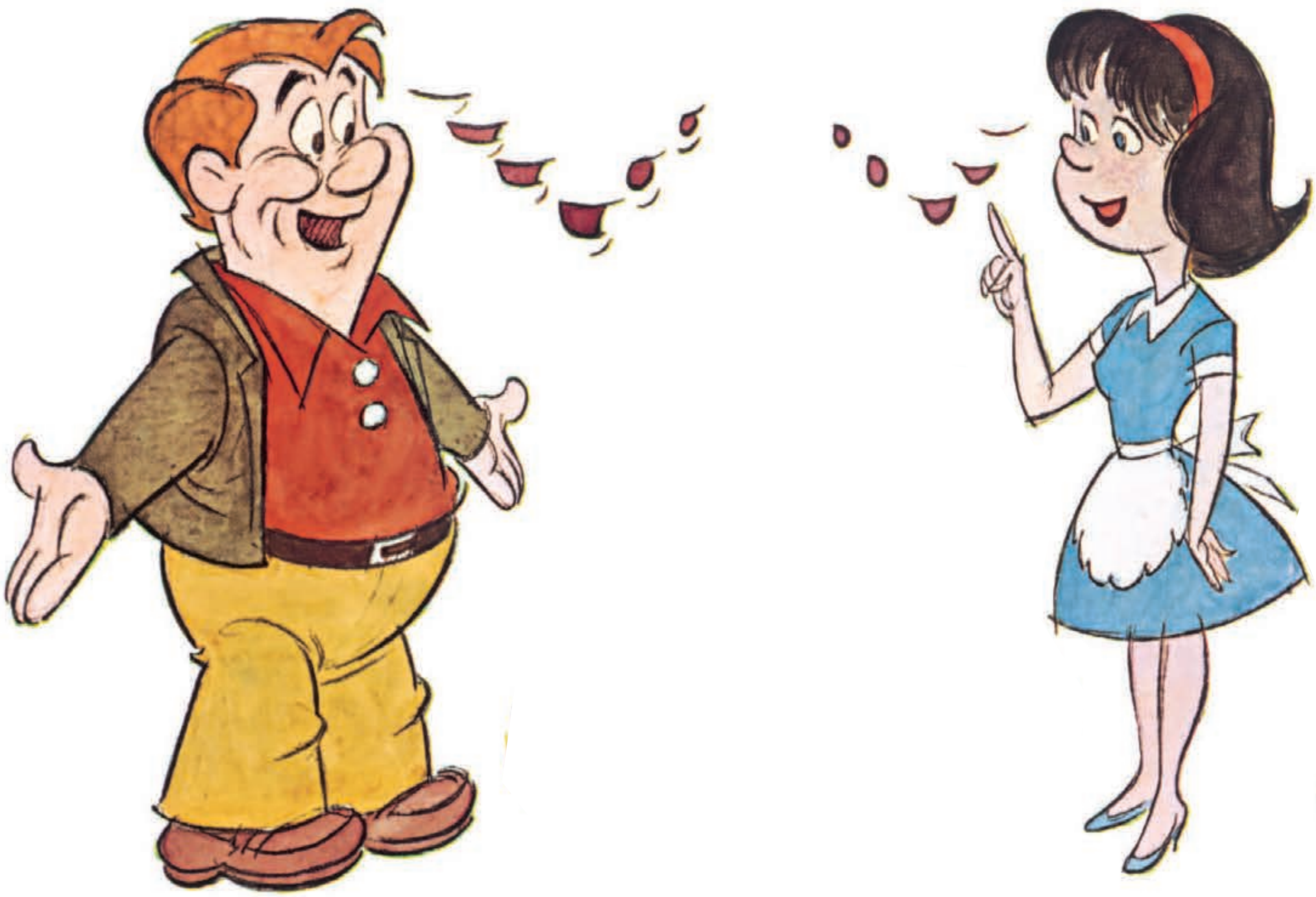
In-between drawing

Jump in size

When you pronounce “all of,” your mouth shapes the sound “ol av.” The “a” in “all” is like the “o” sound in “bought” or “caught.” The “o” in “of” is an Italian “a” sound, as in “far” or “father.” (English is irregular.)

Taking a Close Look at Mouth Action

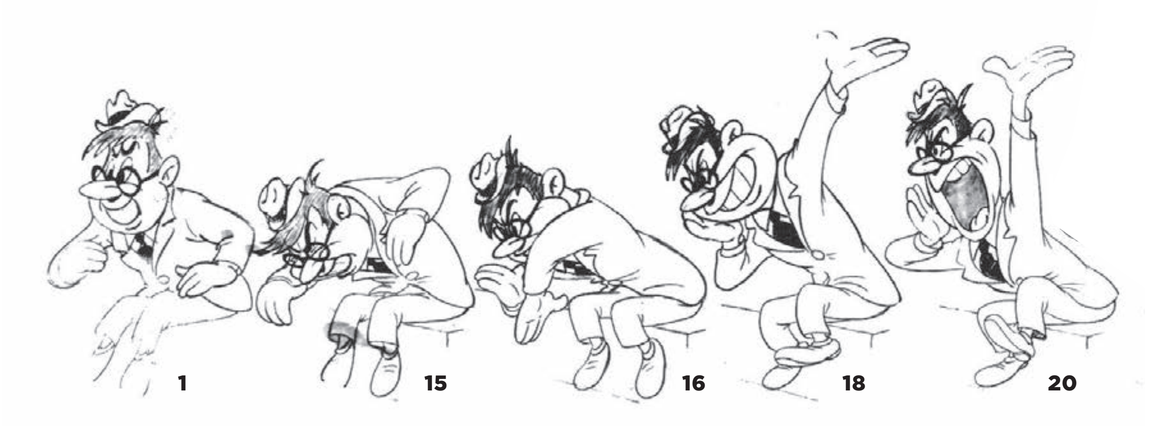
- In the phonetic chart on the previous page, the Italian “a” is formed at the bottom middle of the mouth, the “i” at the top front, and the “oo” at the top back. These are the vowel extremes. The consonant “w” is an extreme “oo,” and the “y” is a continuation of “i.” The chart is a path to follow.
- The phonetic “i” is really two sounds blended: “a” and “i.” Also, “u” is “i” and “oo.” Mouth it. The word “few” actually analyzes the sound “u” for animators.
- Americans mouth “r” as “u.” A Scottish “r” is like “n-t-d.”
- According to phonetic science, “m,” “n,” and “ng” are nasals and sound comes at this mouth, but “p” (unvoiced) and “b” (voiced) are explosions of “m” and the sound after this mouth. Also, “t” and “d” are explosions of “n,” and “k” and “g” are explosions of “ng” (a sound without a letter).



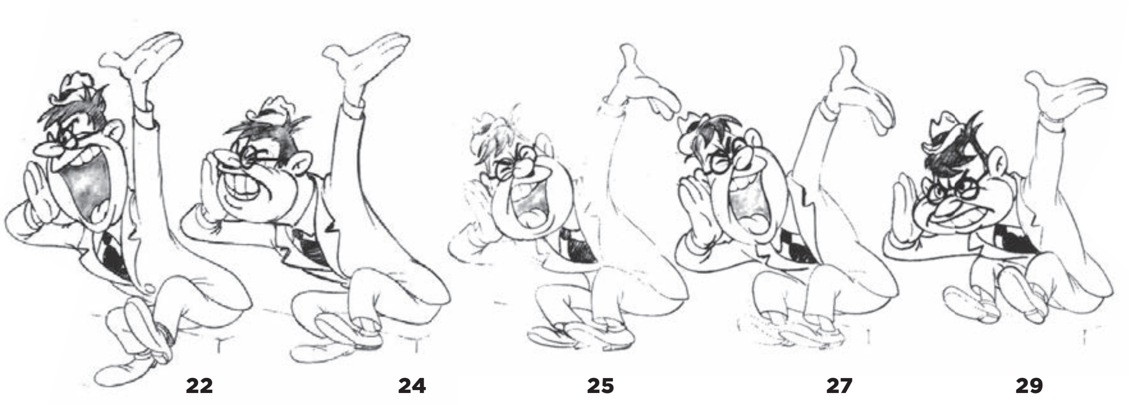
Each character has a mouth that should fit its personality and the mood. For example, if a character mumbles out of the corner of their mouth, the dialogue will be a slight variation of a gesture mouth. Study your own mouth action in a mirror while acting out your character; study the general flow of shapes through the sentence. Your mouth blends and consolidates vowels and consonants in a continuous movement. The faster the speech, the more the words are blended until an entire sentence is mouthed as just one word. There is a speed limit with speech, and animation that passes this limit chatters unrealistically, destroying the illusion. To help with this problem, treat important vowels like a pose with plenty of drawings to make them register. Many mouth shapes in your action can be influenced or modified to fit adjoining mouths, resulting in a smoother action. Many characters’ mouths cannot use all of these positions, and many gestures limit mouth shapes, so just try to draw in the direction of the correct mouth shape.

DIALOGUE IN ACTION

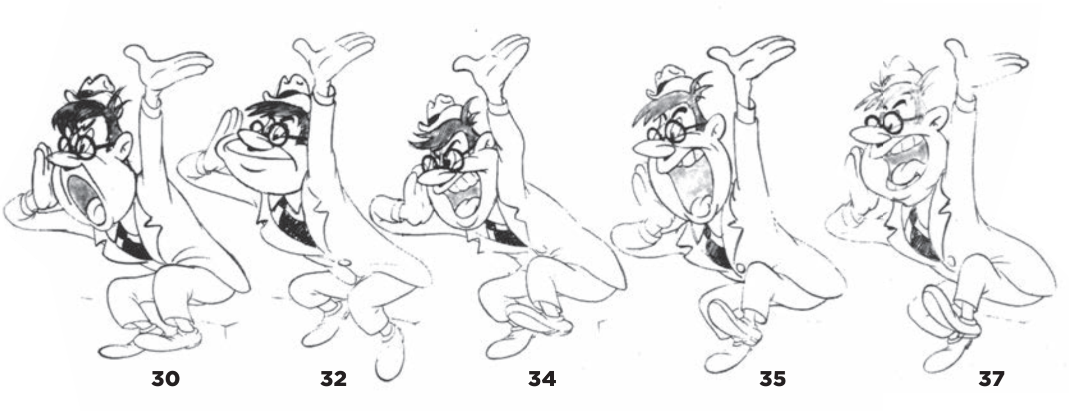
The cleaned-up "key" drawings here will give you an idea of how dialogue can be animated. The scene is a baseball grandstand, and a heckler is yelling at the umpire. The missing numbers of the heckler are in-between drawings. The first drawing of the scene is a twelve-drawing "hold" as the same drawing appears on twelve motion picture frames. Look over this action and study the animation principles I have previously outlined as squash and stretch on the heads, overlapping action, follow-through, the use of anticipation drawing, and the dialogue vowels and consonants from pages 122-123. Also notice the general phrasing of the dialogue here: how the heckler assumes a general position for a whole sentence and then changes to another position for the next sentence, instead of changing positions on every word.



Looks angry   comes into anticipation   Then says: "G   E



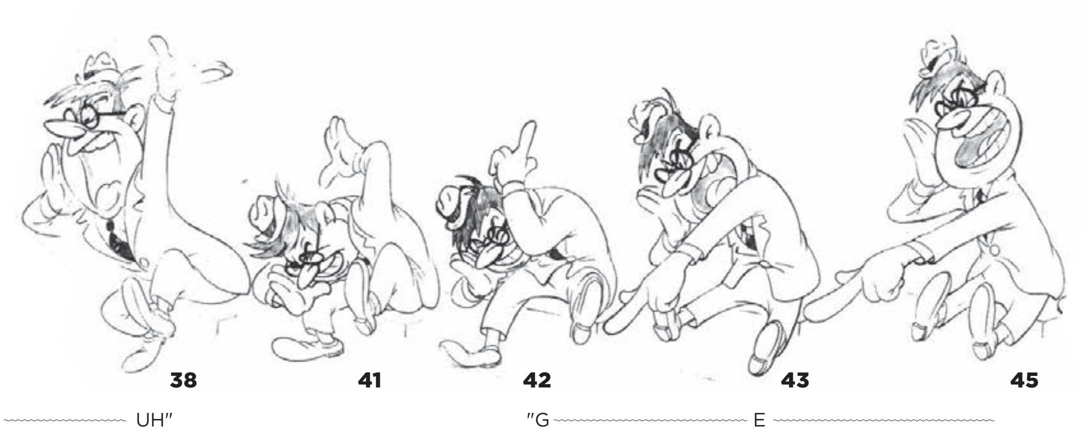
T"   "DE   EE"

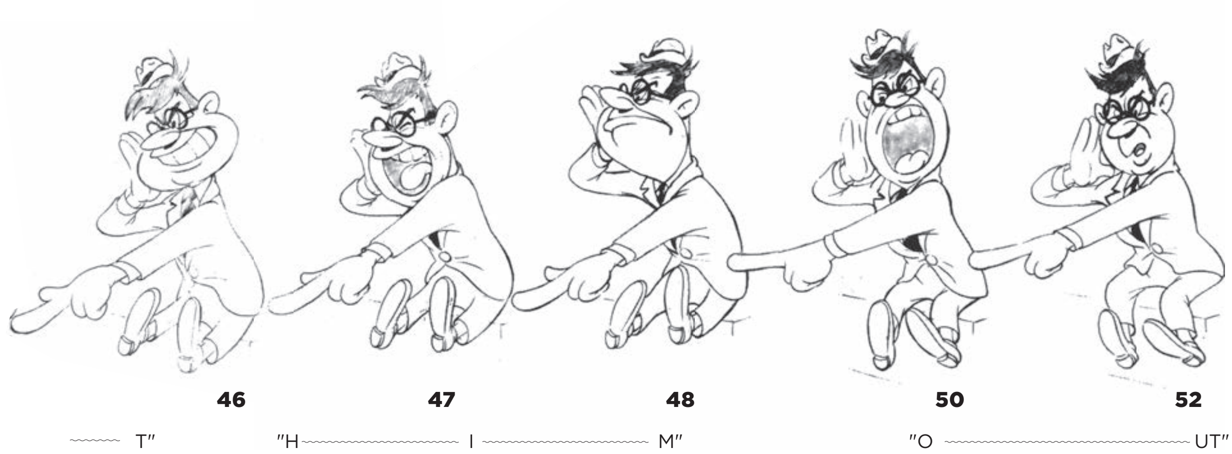


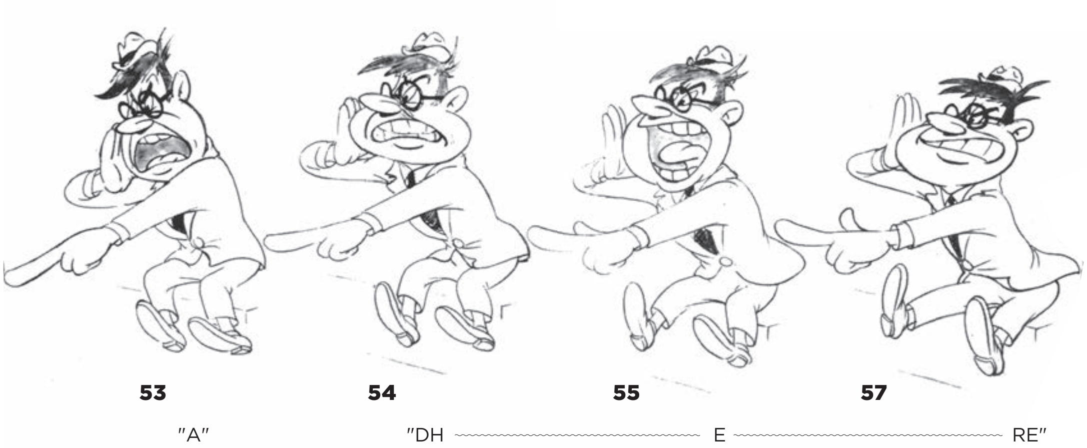
"U   MP   I   Y

Practicing Dialogue

Study how actors go through a series of gestures and attitudes as they act and how they relate this body language to the words—the sentences and paragraphs of the drama. Then look at a comic book, newspaper comic strip, or any dialogue in print and act out the expressions and pose gestures you would use to animate (bring to an illusion of reality) the still cartoon drawing.







Testing Your Skills

Test your animation skills by creating a "flip" book. To make a simple flip book, draw a dot, a circle, a skeleton, etc., on the edge of a notebook. Then draw your cartoon figure, slightly progressed, on each page. Do this for 15 or 20 pages; then flip the pages. Study the illusion of movement that is created and identify any areas that need to be revised. You can also scan or take photos of your work and flip through them on a computer.

ABOUT PRESTON BLAIR

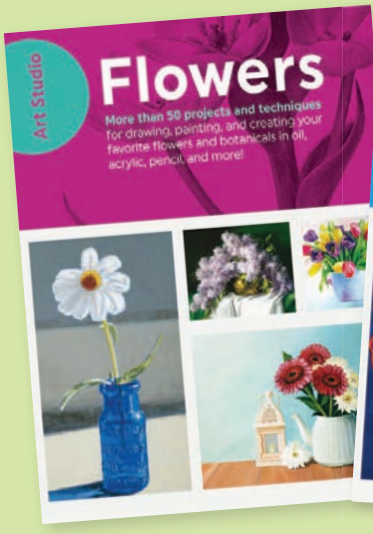
Born in 1908 in Redlands, California, Preston Blair attended Pomona College, and then studied art the Otis Art Institute and illustration under Pruett Carter at Chouinard. He exhibited widely as a member of the California Watercolor Society and the American Watercolor Society in New York.

Preston was one of the fine artists of animation. With the Disney Studio, he designed and animated the hippos in "Dance of the Hours" and animated Mickey Mouse in "The Sorcerer's Apprentice" (both in *Fantasia*), parts of *Pinocchio*, and the segment in *Bambi* when the owl tells about love in "twitterpated" speech.

At the Metro-Goldwyn-Mayer (MGM) cartoon studio, Preston directed Barney Bear shorts, and is well known as the animator and designer of Red Hot Riding Hood in the Tex Avery epic shorts. Later, Preston moved to Connecticut and produced television commercials, educational films, and half-hour cartoon episodes (including *The Flintstones* at Hanna-Barbera) for West Coast producers. He was an inventor of interactive TV systems using animation methods to teach reading or to provide full-figure game action that simulates reality—for example, playing tennis with an animated opponent.

Preston Blair died on April 19, 1995, at the age of 86.

ALSO FROM WALTER FOSTER PUBLISHING


Art Studio
Flowers
More than 50 projects and techniques for drawing, painting, and creating your favorite flowers and botanicals in oil, acrylic, pencil, and more!

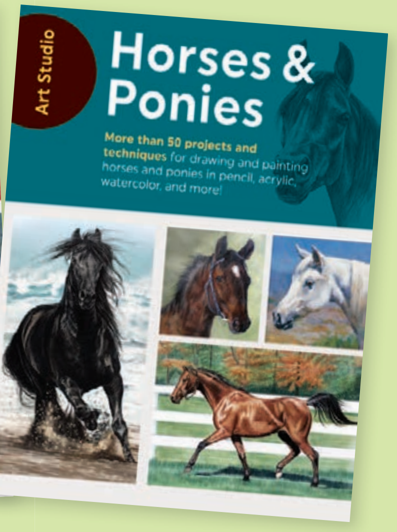
978-1-63322-363-9

Art Studio
Dogs
More than 50 projects and techniques for drawing, painting, and creating 25+ breeds in oil, acrylic, pencil, and more!

978-1-63322-364-6

Art Studio
Faces & Features
More than 50 projects and techniques for drawing and painting heads, faces, and features in pencil, acrylic, watercolor, and more!

978-1-63322-643-2


Art Studio
Horses & Ponies
More than 50 projects and techniques for drawing and painting horses and ponies in pencil, acrylic, watercolor, and more!

978-1-63322-695-1

Quarto Knows
Inspiring | Educating | Creating | Entertaining

Visit www.QuartoKnows.com

Walter Foster